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Ratio	Expression	Gene	Title
4.37766	4.38		ESTs
3.555185	3.56	PAAT-BET	lysophosphatidic acid acyltransferase beta
3.3171	3.32	KRT15	keratin 15
3.22777	3.23	MLLT7	myeloid/lymphoid or mixed-lineage leukemia (trithorax (Drosophila) homolog); translocated to, 7
3.017619	3.02	KRT1	keratin 1 (epidermolytic hyperkeratosis)
3.001495	3.00	CAV1	caveolin 1, caveolae protein, 22kD
2.996355	3.00	FN1	fibronectin 1
2.912214	2.91	TMSB4X	thymosin, beta 4, X chromosome
2.760801	2.76	ANXA1	annexin A1
2.636826	2.64	TMSB4X	thymosin, beta 4, X chromosome
2.584886	2.58	SULT2B1	sulfotransferase family 2B, member 1
2.531669	2.53	COL6A3	collagen, type VI, alpha 3
2.494702	2.49	SEC23B	SEC23-like protein B
2.375721	2.38	GDN	CAG repeat containing (glia-derived nexin I alpha)
2.363677	2.36	MYO7A	myosin VIIA (Usher syndrome 1B (autosomal recessive, severe))
2.349795	2.35	ARHGDI	Rho GDP dissociation inhibitor (GDI) alpha
2.333071	2.33		ESTs, Moderately similar to !!!!! ALU SUBFAMILY SQ WARNING ENTRY !!!!! [H.sapiens]
2.310794	2.31	MUC1	mucin 1, transmembrane
2.250399	2.25	ADRBK1	adrenergic, beta, receptor kinase 1
2.240638	2.24	SNRPF	small nuclear ribonucleoprotein polypeptide F
2.204388	2.20	KRT10	keratin 10 (epidermolytic hyperkeratosis; keratosis palmaris et plantaris)
2.201947	2.20	AHR	aryl hydrocarbon receptor
2.18475	2.18		Human FKBP mRNA for FK-506 binding protein
2.184285	2.18	MMP1	matrix metalloproteinase 1 (interstitial collagenase)
2.183862	2.18		Homo sapiens chromosome 19, cosmid F22329
2.182361	2.18	TPI1	triosephosphate isomerase 1
2.174421	2.17	CYP2B6	cytochrome P450, subfamily IIB (phenobarbital-inducible), polypeptide 6
2.167876	2.17	UQCRB	ubiquinol-cytochrome c reductase binding protein
2.166683	2.17	RPS16	ribosomal protein S16
2.151532	2.15	ITGB5	integrin, beta 5
2.137362	2.14	PRKCI	protein kinase C, iota
2.136893	2.14	RPL31	ribosomal protein L31
2.135801	2.14	LAMR1	laminin receptor 1 (67kD, ribosomal protein SA)
2.132298	2.13	PSMB9	proteasome (prosome, macropain) subunit, beta type, 9 (large multifunctional protease 2)
2.117549	2.12	HSPB1	heat shock 27kD protein 1
2.113886	2.11		Human beta-1D integrin mRNA, cytoplasmic domain, partial cds
2.1039	2.10	MMP2	matrix metalloproteinase 2 (gelatinase A, 72kD gelatinase, 72kD type IV collagenase)
2.103515	2.10	MMP2	matrix metalloproteinase 2 (gelatinase A, 72kD gelatinase, 72kD type IV collagenase)
2.092089	2.09	KRT7	keratin 7
2.090792	2.09	NACA	nascent-polypeptide-associated complex alpha polypeptide
2.080719	2.08	PTMA	prothymosin, alpha (gene sequence 28)
2.078029	2.08	PA2G4	proliferation-associated 2G4, 38kD
2.063162	2.06	RPL27A	ribosomal protein L27a
2.061367	2.06		ESTs
2.060074	2.06	RNASELI	ribonuclease L (2',5'-oligoadenylate synthetase-dependent) inhibitor
2.05162	2.05	COL6A2	collagen, type VI, alpha 2
2.05139	2.05		Human mRNA for ornithine decarboxylase antizyme, ORF 1 and ORF 2
2.04409	2.04	RPL11	ribosomal protein L11
2.039736	2.04	CDH2	cadherin 2, N-cadherin (neuronal)
2.039518	2.04	PMS2L12	postmeiotic segregation increased 2-like 12
2.02107	2.02	POLR2L	polymerase (RNA) II (DNA directed) polypeptide L (7.6kD)
2.020879	2.02		ESTs, Highly similar to 60S RIBOSOMAL PROTEIN L26 [H.sapiens]
2.019761	2.02	PRKDC	protein kinase, DNA-activated, catalytic polypeptide
2.014017	2.01	SEC61B	protein translocation complex beta
2.0054	2.01	GRO1	GRO1 oncogene (melanoma growth stimulating activity, alpha)
2.004741	2.00		ESTs, Moderately similar to cadherin 12 [H.sapiens]
1.991037	1.99	TFCOUP2	transcription factor COUP 2 (chicken ovalbumin upstream promoter 2, apolipoprotein regulatory protein)
1.990129	1.99	LGALS3	lectin, galactoside-binding, soluble, 3 (galectin 3)
1.965069	1.97		ESTs
1.96	1.96	CDH11	cadherin 11 (OB-cadherin, osteoblast)
1.959463	1.96	RPS28	ribosomal protein S28
1.958978	1.96		ESTs
1.947297	1.95		Homo sapiens mRNA for KIAA0788 protein, partial cds
1.94351	1.94	MYL1	myosin, light polypeptide 1, alkali; skeletal, fast
1.927321	1.93	CBP2	collagen-binding protein 2 (collagen 2)
1.926284	1.93	CAV1	caveolin 1, caveolae protein, 22kD
1.925577	1.93	CBP2	collagen-binding protein 2 (collagen 2)

1.924493	1.92		Homo sapiens mRNA: cDNA DKFZp586L2123 (from clone DKFZp586L2123)
1.924285	1.92	COX6B	cytochrome c oxidase subunit VIb
1.920656	1.92	KPNB1	karyopherin (importin) beta 1
1.906771	1.91	MNPEP	methionine aminopeptidase; eIF-2-associated p67
1.906316	1.91	PI6	protease inhibitor 6 (placental thrombin inhibitor)
1.905516	1.91	HMG17	high-mobility group (nonhistone chromosomal) protein 17
1.904415	1.90	CBP2	collagen-binding protein 2 (collagen 2)
1.886166	1.89	RANBP7	RAN binding protein 7
1.885023	1.89	PABPL1	poly(A)-binding protein-like 1
1.874848	1.87	KRT1	keratin 1 (epidermolytic hyperkeratosis)
1.871322	1.87	MMP2	matrix metalloproteinase 2 (gelatinase A, 72kD gelatinase, 72kD type IV collagenase)
1.870603	1.87	VIM	vimentin
1.870045	1.87	ATP5C1	ATP synthase, H+ transporting, mitochondrial F1 complex, gamma polypeptide 1
1.865942	1.87	OSF-2	osteoblast specific factor 2 (fascidin I-like)
1.863346	1.86		Homo sapiens chromosome 19, cosmid F22329
1.861111	1.86	S100A10	S100 calcium-binding protein A10 (annexin II ligand, calpactin I, light polypeptide (p11))
1.860058	1.86	CST3	cystatin C (amyloid angiopathy and cerebral hemorrhage)
1.858106	1.86	CD81	CD81 antigen (target of antiproliferative antibody 1)
1.858004	1.86	RPL6	ribosomal protein L6
1.856855	1.86	COL2A1	collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenital)
1.855778	1.86	BCRP1	breakpoint cluster region protein, uterine leiomyoma, 1; barrier to autointegration factor
1.853552	1.85		ESTs
1.852019	1.85	HXB	hexabrachion (tenascin C, cytactin)
1.850728	1.85	HLA-DNA	major histocompatibility complex, class II, DN alpha
1.849278	1.85	KRT7	keratin 7
1.848257	1.85	RPL7A	ribosomal protein L7a
1.84526	1.85	LAMR1	laminin receptor 1 (67kD, ribosomal protein SA)
1.84325	1.84	HMG1	high-mobility group (nonhistone chromosomal) protein 1
1.842043	1.84		EST
1.839891	1.84	CCND1	cyclin D1 (PRAD1: parathyroid adenomatosis 1)
1.836536	1.84	GDN	CAG repeat containing (glia-derived nexin I alpha)
1.836649	1.84		ESTs, Moderately similar to !!!! ALU SUBFAMILY SQ WARNING ENTRY !!!! [H.sapiens]
1.833092	1.83	RPL18	ribosomal protein L18
1.83305	1.83	S100A10	S100 calcium-binding protein A10 (annexin II ligand, calpactin I, light polypeptide (p11))
1.832272	1.83	MLCB	myosin, light polypeptide, regulatory, non-sarcomeric (20kD)
1.832255	1.83	SAP18	sin3-associated polypeptide, 18kD
1.832097	1.83	ANXA1	annexin A1
1.831283	1.83	HOX11	homeo box 11 (T-cell lymphoma 3-associated breakpoint)
1.830147	1.83	FH	fumarate hydratase
1.827678	1.83	YB1	Major histocompatibility complex, class II, Y box-binding protein I; DNA-binding protein B
1.827431	1.83	PSEN1	presenilin 1 (Alzheimer disease 3)
1.826973	1.83	PTP4A2	protein tyrosine phosphatase type IVA, member 2
1.825279	1.83	CDH2	cadherin 2, N-cadherin (neuronal)
1.825232	1.83	GDN	CAG repeat containing (glia-derived nexin I alpha)
1.823895	1.82	DGUOK	deoxyguanosine kinase
1.822602	1.82	CDH11	cadherin 11 (OB-cadherin, osteoblast)
1.821921	1.82		Human metallothionein (MT)I-F gene
1.820694	1.82	SRD5A2	steroid-5-alpha-reductase, alpha polypeptide 2 (3-oxo-5 alpha-steroid delta 4-dehydrogenase alpha 2)
1.819337	1.82	RPS4X	ribosomal protein S4, X-linked
1.812413	1.81	NNAT	neuronatin
1.808221	1.81	RPL28	ribosomal protein L28
1.806496	1.81	SPARC	secreted protein, acidic, cysteine-rich (osteonectin)
1.804253	1.80		ESTs

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Ratio	Expression	Gene	Title
0.505996	-1.98	JAK1	Janus kinase 1 (a protein tyrosine kinase)
0.50599	-1.98	TPM1	tropomyosin 1 (alpha)
0.50578	-1.98	C3F	putative protein similar to nessy (Drosophila)
0.505611	-1.98	KIAA0042	KIAA0042 gene product
0.505338	-1.98		ESTs
0.505251	-1.98		EST
0.504824	-1.98	RGS6	regulator of G protein signalling 6
0.502906	-1.99	IL1RL1	interleukin 1 receptor-like 1
0.502703	-1.99		ESTs
0.502123	-1.99		ESTs
0.501903	-1.99	EPS15	epidermal growth factor receptor pathway substrate 15
0.501849	-1.99	AQP7	aquaporin 7

0.501728	-1.99	NVL	nuclear VCP-like
0.501417	-1.99	APOB	apolipoprotein B (including Ag(x) antigen)
0.501363	-1.99	RHD	Rhesus blood group, D antigen
0.501024	-2.00		ESTs
0.499388	-2.00	ADCYAP1	adenylate cyclase activating polypeptide 1 (pituitary)
0.499379	-2.00		ESTs
0.497612	-2.01	RNPS1	RNA-binding protein
0.497308	-2.01	EGR3	early growth response 3
0.496852	-2.01		ESTs, Highly similar to NEUROLYSIN PRECURSOR [R.norvegicus]
0.495827	-2.02	COL8A3	collagen, type IX, alpha 3
0.495781	-2.02	EDNRB	endothelin receptor type B
0.495697	-2.02		ESTs
0.495379	-2.02		ESTs, Highly similar to CARBONIC ANHYDRASE III [H.sapiens]
0.49513	-2.02		ESTs
0.494838	-2.02		ESTs
0.494634	-2.02	CYP2E	cytochrome P450, subfamily IIE (ethanol-inducible)
0.493342	-2.03		Human zinc-finger protein C2H2-150 mRNA, complete cds
0.492507	-2.03		Homo sapiens mRNA for leucocyte vacuolar protein sorting
0.492446	-2.03	ITGA6	integrin, alpha 6
0.491536	-2.03	HM74	putative chemokine receptor; GTP-binding protein
0.491512	-2.03		ESTs
0.49102	-2.04	CYP2J2	cytochrome P450, subfamily IIJ (arachidonic acid epoxygenase) polypeptide 2
0.490859	-2.04	DNASE1L3	deoxyribonuclease I-like 3
0.490338	-2.04	IL6	interleukin 6 (interferon, beta 2)
0.488681	-2.05		EST
0.487732	-2.05	KCNJ13	potassium inwardly-rectifying channel, subfamily J, member 13
0.487612	-2.05	HSD11B1	hydroxysteroid (11-beta) dehydrogenase 1
0.487227	-2.05	PIP5K1B	phosphatidylinositol-4-phosphate 5-kinase, type I, beta
0.486057	-2.06		ESTs
0.484803	-2.06	DSC2	desmocollin 2
0.484767	-2.06		ESTs
0.484476	-2.06		EST
0.484148	-2.07	HEC	highly expressed in cancer, rich in leucine heptad repeats
0.483241	-2.07	SALL2	sal (Drosophila)-like 2
0.482959	-2.07	BR140	bromodomain-containing protein, 140kD (peregryn)
0.482408	-2.07		EST
0.481446	-2.08		ESTs
0.480445	-2.08	CD22	CD22 antigen
0.478764	-2.09		ESTs
0.478612	-2.09	PRPH	peripherin
0.477533	-2.09		ESTs
0.477408	-2.09		ESTs
0.477231	-2.10	VRK2	vaccinia related kinase 2
0.476812	-2.10		ESTs, Moderately similar to poly(ADP-ribose) polymerase [H.sapiens]
0.476372	-2.10		ESTs
0.475903	-2.10	TGFB3	transforming growth factor, beta 3
0.475219	-2.10		Homo sapiens (PWD) gene mRNA, 3' end
0.474813	-2.11		ESTs
0.473687	-2.11	CYP1A1	cytochrome P450, subfamily I (aromatic compound-inducible), polypeptide 1
0.472832	-2.11	GAC1	glioma amplified on chromosome 1 protein (leucine-rich)
0.471048	-2.12	SAA1	serum amyloid A1
0.470767	-2.12	TMEM1	transmembrane protein 1
0.468086	-2.14	UBD	diubiquitin
0.467735	-2.14	GYPA	glycophorin A (includes MN blood group)
0.466793	-2.14	FGB	fibrinogen, B beta polypeptide
0.466138	-2.15		Human heterochromatin protein HP1Hs-gamma mRNA, complete cds
0.464548	-2.15		ESTs
0.464524	-2.15	CDC7L1	CDC7 (cell division cycle 7, S. cerevisiae, homolog)-like 1
0.464376	-2.15	BRAF	v-rat murine sarcoma viral oncogene homolog B1
0.461843	-2.17	OSMR	oncostatin M receptor
0.461711	-2.17	GAK	cyclin G associated kinase
0.461265	-2.17	PRL	prolactin
0.461174	-2.17	RODH	oxidative 3 alpha hydroxysteroid dehydrogenase; retinol dehydrogenase
0.460689	-2.17		ESTs
0.457589	-2.19	XRCC4	X-ray repair complementing defective repair in Chinese hamster cells 4
0.457432	-2.19		Human heterochromatin protein HP1Hs-gamma mRNA, complete cds
0.456747	-2.19	MYH11	myosin, heavy polypeptide 11, smooth muscle
0.455606	-2.19		ESTs
0.453198	-2.21		ESTs, Highly similar to keratin K5, 58K type II, epidermal [H.sapiens]

0.452355	-2.21	EST
0.451604	-2.21	MSE55 serum constituent protein
0.45109	-2.22	KIAA0427 KIAA0427 gene product
0.450427	-2.22	ESTs
0.448814	-2.23	HRG histidine-rich glycoprotein
0.446084	-2.24	ESTs, Highly similar to calcium-activated potassium channel [H.sapiens]
0.444169	-2.25	ITGAV Integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)
0.443218	-2.26	ESTs
0.442987	-2.26	ESTs
0.442003	-2.26	Human transcription factor JunB (JunB) gene, 5' region and complete cds
0.441276	-2.27	WHITE1 ATP-binding cassette 8 (homolog of Drosophila white)
0.440934	-2.27	KIAA0311 A kinase (PRKA) anchor protein 6
0.438989	-2.28	ESM1 endothelial cell-specific
0.438627	-2.28	LTA4H leukotriene A4 hydrolase
0.435726	-2.30	IL1B Interleukin 1, beta
0.435105	-2.30	BDH 3-hydroxybutyrate dehydrogenase (heart, mitochondrial)
0.432874	-2.31	ESTs, Highly similar to ARYLSULFATASE D PRECURSOR [H.sapiens]
0.429736	-2.33	PSCDBP pleckstrin homology, Sec7 and coiled/coiled domains, binding protein
0.428978	-2.33	MYBPC1 myosin-binding protein C, slow-type
0.427744	-2.34	ESTs, Weakly similar to hypothetical protein [H.sapiens]
0.427136	-2.34	EST
0.426459	-2.34	ESTs, Highly similar to LECT2 precursor [H.sapiens]
0.423683	-2.36	PRH2 proline-rich protein HaeIII subfamily 2
0.42099	-2.38	ESTs
0.418102	-2.39	PTCH patched (Drosophila) homolog
0.412483	-2.42	ESTs
0.411249	-2.43	ESTs, Highly similar to keratin K5, 58K type II, epidermal [H.sapiens]
0.408283	-2.45	ESTs
0.407869	-2.45	ESTs
0.406033	-2.46	ESTs
0.401269	-2.49	WAVE3 WASP family Verprolin-homologous protein 3
0.391109	-2.56	Human putative astrocytic NOVA-like RNA-binding protein (ANOVA) mRNA, partial cds
0.387487	-2.58	ESTs
0.385543	-2.59	ESTs, Weakly similar to (define not available 4102188) [H.sapiens]
0.383043	-2.61	ESTs
0.383009	-2.61	ESTs
0.382362	-2.62	ESTs, Weakly similar to (define not available 4102188) [H.sapiens]
0.375872	-2.66	IFNG interferon, gamma
0.369436	-2.71	ESTs
0.367155	-2.72	ESTs
0.366711	-2.73	ESTs
0.358349	-2.79	ESTs
0.353671	-2.83	ESTs
0.343033	-2.92	Human heterochromatin protein HP1Hs-gamma mRNA, complete cds
0.339846	-2.94	ESTs
0.324327	-3.08	EST
0.307325	-3.25	ESTs
0.298473	-3.35	BS69 adenovirus 5 E1A binding protein
0.251472	-3.98	ESTs
0.240206	-4.16	SLC16A1 solute carrier family 16 (monocarboxylic acid transporters), member 1

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Ratio	Expression	Gene	Title
3.109605	3.11		ESTs
2.906738	2.91	PAAT-BET	lysophosphatidic acid acyltransferase beta
2.344185	2.34		ESTs
2.320292	2.32	KRT1	keratin 1 (epidermolytic hyperkeratosis)
2.279307	2.28	NSMAF	neutral sphingomyelinase (N-SMase) activation associated factor
2.179084	2.18	RASA1	RAS p21 protein activator (GTPase activating protein) 1
2.145117	2.15	TMSB4X	thymosin, beta 4, X chromosome
2.079539	2.08	HARS	histidyl-tRNA synthetase
2.039364	2.04	IL1A	interleukin 1, alpha
1.984298	1.98		ESTs
1.957125	1.96	FN1	fibronectin 1
1.89454	1.89	KRT15	keratin 15
1.85997	1.86	COL6A2	collagen, type VI, alpha 2
1.824776	1.82		ESTs, Weakly similar to neuronal thread protein AD7c-NTP [H.sapiens]
1.808138	1.81	AKAP79	A kinase (PRKA) anchor protein 5
1.807135	1.81	PLP	proteolipid protein (Pelizaeus-Merzbacher disease, spastic paraplegia 2, uncomplicated)

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Ratio	Expression	Gene	Title
0.308997	-3.24		ESTs
0.315629	-3.17		ESTs
0.361489	-2.77	HTR3	5-hydroxytryptamine (serotonin) receptor 3
0.363186	-2.75		ESTs
0.381188	-2.62	BS69	adenovirus 5 E1A binding protein
0.411681	-2.43		Human transcription factor junB (junB) gene, 5' region and complete cds
0.428495	-2.33	PTCH	patched (Drosophila) homolog
0.437632	-2.29		ESTs, Moderately similar to cysteine-rich fibroblast growth factor receptor [H.sapiens]
0.449334	-2.23	ACOX3	acyl-Coenzyme A oxidase 3, pristanoyl
0.452896	-2.21	SLC16A1	solute carrier family 16 (monocarboxylic acid transporters), member 1
0.45436	-2.20		ESTs
0.455786	-2.19		ESTs
0.45889	-2.18		ESTs, Highly similar to alpha-1 type XVI collagen [H.sapiens]
0.464693	-2.15		ESTs
0.469221	-2.13		ESTs
0.470545	-2.13	FGR	Gardner-Rasheed feline sarcoma viral (v-fgr) oncogene homolog
0.47252	-2.12	IL6	interleukin 6 (interferon, beta 2)
0.473018	-2.11	BRAF	v-raf murine sarcoma viral oncogene homolog B1
0.474167	-2.11		EST
0.474976	-2.11		ESTs
0.475615	-2.10	PODXL	podocalyxin-like
0.480085	-2.08	PRH2	proline-rich protein HaeIII subfamily 2
0.480483	-2.08		ESTs
0.480784	-2.08		ESTs
0.481363	-2.08	VRK2	vaccinia related kinase 2
0.485189	-2.06		EST
0.487224	-2.05	MSE55	serum constituent protein
0.491589	-2.03	ATOX1	ATX1 (antioxidant protein 1, yeast) homolog 1
0.496653	-2.01		EST
0.496664	-2.01		Human putative astrocytic NOVA-like RNA-binding protein (ANOVA) mRNA, partial cds
0.498084	-2.01		ESTs, Weakly similar to similar to Schizosaccharomyces pombe 4-nitrophenylphosphatase [C.elegans]
0.500945	-2.00		Novel human gene mapping to chromosome 22
0.501755	-1.99		ESTs

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Ratio	Expression	gene	title
2.817202	2.82	HARS	histidyl-tRNA synthetase
2.849358	2.85	IL13RA2	interleukin 13 receptor, alpha 2
2.558227	2.58		ESTs
2.371489	2.37		EST
2.271833	2.27		ESTs
2.257125	2.28	CYP2C8	cytochrome P450, subfamily IIC (mephenytoin 4-hydroxylase), polypeptide 8
2.231871	2.23		ESTs, Highly similar to probable ataxia-telangiectasia group D protein [H.sapiens]
2.231197	2.23	MEF2C	MADS box transcription enhancer factor 2, polypeptide C (myocyte enhancer factor 2C)
2.194434	2.19	SUR	sulfonyleurea receptor (hyperinsulinemia)
2.188793	2.19	PRRG1	proline-rich Gla (G-carboxyglutamic acid) polypeptide 1
2.177079	2.18	SRPK1	SFRS protein kinase 1
2.165409	2.17		Homo sapiens 1C7 precursor, mRNA, alternatively spliced, complete cds
2.148777	2.15		ESTs
2.13133	2.13	KIAA0914	KIAA0914 gene product
2.070285	2.07	FMO1	flavin containing monooxygenase 1
2.025824	2.03	PMBP	progesterone membrane binding protein
2.02439	2.02	IL8	interleukin 8
2.009028	2.01	DTR	diphtheria toxin receptor (heparin-binding epidermal growth factor-like growth factor)
2.008158	2.01		ESTs, Weakly similar to TERA_HUMAN [H.sapiens]
2.001924	2.00	PAAT-BET	lysophosphatidic acid acyltransferase beta
2.00011	2.00	CDC14A	CDC14 (cell division cycle 14, S. cerevisiae) homolog A
1.998754	2.00		ESTs
1.986522	1.99	MMP18	matrix metalloproteinase 18 (membrane-inserted)
1.979635	1.98	KRT1	keratin 1 (epidermolytic hyperkeratosis)
1.95785	1.98	ATF3	activating transcription factor 3
1.950569	1.95	ZNF198	zinc finger protein 198
1.948818	1.95	DCT	dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)
1.943441	1.94	ERCC3	excision repair cross-complementing rodent repair deficiency, complementation group 3 (xeroderma pigmentosum group B complementing)
1.934897	1.93		ESTs
1.915407	1.92	CLDN4	claudin 4
1.906953	1.91	MADH1	MAD (mothers against decapentaplegic, Drosophila) homolog 1
1.902796	1.90	MDU1	antigen identified by monoclonal antibodies 4F2, TRA1.10, TROP4, and T43
1.900528	1.90	TM4SF2	transmembrane 4 superfamily member 2
1.886489	1.89	PIGB	phosphatidylinositol glycan, class B
1.881188	1.88		ESTs
1.881117	1.88	ORM1	orosomucoid 1
1.876398	1.88	VIPR1	vasoactive intestinal peptide receptor 1
1.87563	1.88		Human mRNA for alpha mannosidase II isozyme, complete cds
1.875235	1.88	FBL	fibrillarin
1.871808	1.87		ESTs, Moderately similar to !!!! ALU SUBFAMILY SQ WARNING ENTRY !!!! [H.sapiens]
1.871519	1.87		EST, Weakly similar to rS-Rex-b [R.norvegicus]
1.867313	1.87	PRAME	preferentially expressed antigen of melanoma
1.865815	1.87	FN1	fibronectin 1
1.864122	1.86	CYP2C8	cytochrome P450, subfamily IIC (mephenytoin 4-hydroxylase), polypeptide 8
1.852988	1.85	KIAA0108	anti-oxidant protein 2 (non-selenium glutathione peroxidase, acidic calcium-independent phospholipase A2)
1.851529	1.85	RNASE1	ribonuclease L (2',5'-oligoadenylate synthetase-dependent) inhibitor
1.845123	1.85	TAF2G	TATA box binding protein (TBP)-associated factor, RNA polymerase II, G, 32kD
1.838664	1.84	RIN	Ric (Drosophila)-like, expressed in neurons
1.835158	1.84	ADAM8	a disintegrin and metalloprotease domain 8
1.832177	1.83		ESTs, Highly similar to (define not available 4406708) [H.sapiens]
1.827011	1.83	PTPN12	protein tyrosine phosphatase, non-receptor type 12
1.821927	1.82	IL6	interleukin 6 (interferon, beta 2)
1.818956	1.82	SKAP55	src kinase-associated phosphoprotein of 55 kDa
1.812874	1.81		Homo sapiens mRNA; cDNA DKFZp434A091 (from clone DKFZp434A091)
1.81037	1.81		ESTs
1.808081	1.81	WS-3	novel RGD-containing protein
1.802603	1.80		ESTs, Highly similar to LAR-interacting protein 1a [H.sapiens]
1.800428	1.80	MPP-1	M-phase phosphoprotein 1

32 y.o. JJ 24hr DOWNREGULATED

Ratio	Expression	gene	title
0.382095	-2.76	SLC16A1	solute carrier family 16 (monocarboxylic acid transporters), member 1
0.405122	-2.47		ESTs
0.424257	-2.36		Human 1.1 kb mRNA upregulated in retinoic acid treated HL-60 neutrophilic cells
0.442975	-2.26	BS69	adenovirus 5 E1A binding protein
0.450115	-2.22		ESTs
0.454809	-2.20	MYD88	myeloid differentiation primary response gene (88)
0.475868	-2.10		ESTs, Moderately similar to cysteine-rich fibroblast growth factor receptor [H.sapiens]
0.491206	-2.04	PRH2	proline-rich protein HaellI subfamily 2
0.492194	-2.03	ARPC2	actin related protein 2/3 complex, subunit 2 (34 kD)
0.501261	-1.99		ESTs
0.502819	-1.99		Human AMP deaminase isoform L (AMPD2) mRNA, exons 6-18, partial cds
0.504832	-1.98		ESTs

42 y.o. Upregulated @ 4hrs (M Array)

title	Gene	Expression	Ratio
lymphotoxin beta receptor (TNFR superfamily, member 3	LTBR	6.3	6.321771
protein tyrosine phosphatase, receptor type, K	PTPRK	4.3	4.343286
collagen, type VII, alpha 1 (epidermolysis bullosa, dystrophic, dominant and recessive)	COL7A1	3.6	3.599896
Homo sapiens mRNA; cDNA DKFZp566H0124 (from clone DKFZp566H0124)	-	3.6	3.568513
LIM domain kinase 1	LIMK1	3.3	3.300528
cytochrome P450, subfamily IIIA (naphedipine oxidase), polypeptide 3	CYP3A3	3	3.044716
syntaxin 1A (brain)	STX1A	2.8	2.827831
glucosamine (N-acetyl)-6-sulfatase (Sanfilippo disease IIID)	GNS	2.8	2.764916
v-myc avian myelocytomatosis viral related oncogene, neuroblastoma derived	MYCN	2.5	2.497822
glycerol-3-phosphate dehydrogenase 1 (soluble)	GPDI	2.3	2.276179
activin A receptor, type II	ACVR2	2.3	2.258105
ESTs, Weakly similar to (define not available 4079831) [M.musculus]	-	2.1	2.131264
ESTs, Weakly similar to SNF2alpha protein [H.sapiens]	-	2.1	2.119184
leukemia associated gene 1, candidate tumor suppressor frequently deleted in B-cell chronic lymphocytic leuk	LEU1	2.1	2.097496
collagen, type IV, alpha 1	COL4A1	2	2.053369
EST	-	2	2.039327
Melanoma associated gene	D2S448	2	2.02669
ESTs	-	2	2.011823
Homo sapiens mRNA for KIAA1029 protein, complete cds	-	2	2.011775
formyl peptide receptor 1	FPR1	2	1.968763
ESTs	-	2	1.958668
ESTs	-	2	1.952645
single-strand selective monofunctional uracil DNA glycosylase	SMUG1	2	1.950949
histone acetyltransferase	MORF	1.9	1.945018
HIRA interacting protein 4 (dnaJ-like)	HIRIP4	1.9	1.94467
ribonuclease/angiogenin inhibitor	RNH	1.9	1.939134
prostaglandin E receptor 3 (subtype EP3)	PTGER3	1.9	1.93913
Human GOS2 protein gene, complete cds	-	1.9	1.919286
Human pre-T/NK cell associated protein (3B3) mRNA, 3' end	-	1.9	1.910964
lamin A/C	LMNA	1.9	1.903902
KISS-1 metastasis-suppressor	KISS1	1.9	1.902801
Human mRNA for alpha mannosidase II isozyme, complete cds	-	1.9	1.885469
N-myristoyltransferase 1	NMT1	1.9	1.878116
EST	-	1.9	1.869208
ESTs	-	1.9	1.867477
ATPase, Na ⁺ /K ⁺ transporting, gamma 1 polypeptide	ATP1G1	1.9	1.861404
vasodilator-stimulated phosphoprotein	VASP	1.9	1.858491
serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 8	SERPINA8	1.9	1.854427
Homo sapiens gene for thymidylate synthase, exons 1, 2, 3, 4, 5, 6, 7, complete cds	-	1.9	1.851235
RAB2, member RAS oncogene family	RAB2	1.8	1.845274
ESTs	-	1.8	1.839239
immunoglobulin lambda-like polypeptide 2	IGLL2	1.8	1.831752
ESTs, Weakly similar to neural variant mena+ protein [M.musculus]	-	1.8	1.830462
agouti (mouse)-signaling protein	ASIP	1.8	1.815062
death-associated protein kinase 3	DAPK3	1.8	1.802018
coagulation factor C (Limulus polyphemus) homology	COCH	1.8	1.801901
corticotropin releasing hormone-binding protein	CRHBP	1.8	1.801196
phorbol-12-myristate-13-acetate-induced protein 1	PMAIP1	1.8	1.798583
lactate dehydrogenase C	LDHC	1.8	1.793383
protein tyrosine phosphatase, non-receptor type 3	PTPN3	1.8	1.793127
interleukin 6 (interferon, beta 2)	IL6	1.8	1.791005

42 y.o. Downregulated @ 4hrs (M Array)

integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VLA-4 receptor)	ITGA4	-1.8	0.524865
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Homo sapiens cosmid clone LUCA14 from 3p21.3	-	-4.8	0.524613
ribosomal protein L24	RPL24	-1.8	0.523942
inactive progesterone receptor, 23 kD	P23	-1.8	0.523696
cellular retinoic acid-binding protein 1	CRABP1	-1.8	0.523139
X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-	XRCC5	-1.8	0.522942
superoxide dismutase 1, soluble (amyotrophic lateral sclerosis 1 (adult))	SOD1	-1.8	0.522557
general transcription factor IIH, polypeptide 3 (34kD subunit)	GTF2H3	-1.8	0.521663
metallothionein 1H	MT1H	-1.8	0.520999
adenosine deaminase	ADA	-1.8	0.520786
EST	-	-1.8	0.520149
hypothetical protein MPMGp800C04260Q003	LOC56849	-1.8	0.519889
interleukin 10 receptor, beta	IL10RB	-1.8	0.519728
tumor necrosis factor receptor superfamily, member 8	TNFRSF8	-1.8	0.519476
API5-like 1	API5L1	-1.8	0.518216
ESTs, Highly similar to MEM3 [M.musculus]	-	-1.8	0.516831
SULT1C sulfotransferase	SULT1C2	-1.8	0.516498
NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 4 (15kD, B15)	NDUFB4	-1.8	0.516165
similar to S. pombe dim1+	DIM1	-1.9	0.513666
cathepsin B	CTSB	-1.9	0.512757
inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma	IKBKG	-1.9	0.512619
CD63 antigen (melanoma 1 antigen)	CD63	-1.9	0.512512
tropomyosin 2 (beta)	TPM2	-1.9	0.512163
keratin 10 (epidermolytic hyperkeratosis; keratosis palmaris et plantaris)	KRT10	-1.9	0.510834
collagen, type XVI, alpha 1	COL16A1	-1.9	0.510708
Meis (mouse) homolog 2	MEIS2	-1.9	0.510656
mannan-binding lectin serine protease 2	MASP2	-1.9	0.509707
sulfotransferase family, cytosolic, 2B, member 1	SULT2B1	-1.9	0.509333
ribosomal protein S23	RPS23	-1.9	0.508995
ESTs, Highly similar to TRANSDUCIN-LIKE ENHANCER PROTEIN 3 [H.sapiens]	-	-1.9	0.50826
ESTs	-	-1.9	0.507252
adrenergic, alpha-1D-, receptor	ADRA1D	-1.9	0.507229
Cytochrome P450, subfamily XVII (steroid 17-alpha-hydroxylase), adrenal hyperplasia	-	-1.9	0.507029
collagen-binding protein 2 (colligen 2)	CBP2	-1.9	0.505593
Rho GDP dissociation inhibitor (GDI) alpha	ARHGDI	-1.9	0.505421
ribosomal protein S27a	RPS27A	-2	0.504093
collagen, type VI, alpha 3	COL6A3	-2	0.503927
low density lipoprotein-related protein-associated protein 1 (alpha-2-macroglobulin rece	LRPAP1	-2	0.503578
metallothionein 1E (functional)	MT1E	-2	0.50356
A kinase (PRKA) anchor protein 5	AKAP79	-2	0.502455
annexin A4	ANXA4	-2	0.500984
small inducible cytokine subfamily A (Cys-Cys), member 11 (eotaxin)	SCYA11	-2	0.500457
ESTs, Highly similar to putative [H.sapiens]	-	-2	0.50032
ESTs, Weakly similar to unknown [H.sapiens]	-	-2	0.500294
cytochrome c oxidase subunit VIIb	COX7B	-2	0.500098
collagen, type VI, alpha 2	COL6A2	-2	0.499408
N-acetyltransferase, homolog of S. cerevisiae ARD1	ARD1	-2	0.49925
POU domain, class 2, transcription factor 2	POU2F2	-2.1	0.494918
cytochrome P450, subfamily IIB (phenobarbital-inducible), polypeptide 6	CYP2B6	-2.1	0.492438
ESTs, Highly similar to alpha-1 type XVI collagen [H.sapiens]	-	-2.1	0.491904
collagen, type IV, alpha 1	COL4A1	-2.1	0.491252
ribosomal protein S4, X-linked	RPS4X	-2.1	0.490118
v-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)	AKT3	-2.1	0.489753
ESTs, Highly similar to 6-PHOSPHOGLUCONATE DEHYDROGENASE, DECARBOX	-	-2.1	0.488829
H.sapiens hGDS mRNA for smg GDS	-	-2.1	0.488545
sulfotransferase family 2B, member 1	SULT2B1	-2.1	0.487957
collagen, type VI, alpha 1	COL6A1	-2.1	0.486493

ribosomal protein S10	RPS10	-2.1	0.486384
ESTs, Highly similar to SMN gene [H.sapiens]	-	-2.2	0.481364
paired mesoderm homeo box 1	PMX1	-2.2	0.478998
sulfonylurea receptor (hyperinsulinemia)	SUR	-2.2	0.478794
collagen, type VI, alpha 3	COL6A3	-2.2	0.478778
lactate dehydrogenase B	LDHB	-2.2	0.478136
Cytochrome P-450 superfamily/ Leutotriene B4 omega hydrolase	-	-2.2	0.47798
sulfotransferase family 2B, member 1	SULT2B1	-2.2	0.476325
vasoactive intestinal peptide receptor 1	VIPR1	-2.2	0.475721
splicing factor, arginine/serine-rich 2	SFRS2	-2.3	0.474766
vimentin	VIM	-2.3	0.470396
plectin 1, intermediate filament binding protein, 500kD	PLEC1	-2.3	0.467709
eukaryotic translation initiation factor 2, subunit 2 (beta, 38kD)	EIF2S2	-2.3	0.466897
small nuclear ribonucleoprotein polypeptides B and B1	SNRPB	-2.4	0.4634
collagen, type VI, alpha 2	COL6A2	-2.4	0.461341
cold shock domain protein A	CSDA	-2.4	0.461194
Collagen, type XI, alpha 1	-	-2.4	0.45689
zinc finger protein homologous to Zfp161 in mouse	ZFP161	-2.4	0.456195
procollagen C-endopeptidase enhancer	PCOLCE	-2.5	0.45277
actin related protein 2/3 complex, subunit 1A (41 kD)	ARPC1B	-2.5	0.450127
ESTs	-	-2.5	0.448743
ESTs, Weakly similar to cDNA EST EMBL:M89154 comes from this gene [C.elegans]	-	-2.6	0.439969
cyclin D1 (PRAD1: parathyroid adenomatosis 1)	CCND1	-2.6	0.438016
ESTs, Moderately similar to (define not available 4689144) [H.sapiens]	-	-2.6	0.436261
eukaryotic translation initiation factor 3, subunit 4 (delta, 44kD)	EIF3S4	-2.6	0.435117
collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)	COL3A1	-2.7	0.434679
RNA binding motif protein 3	RBM3	-2.7	0.43406
proteasome (prosome, macropain) subunit, beta type, 7	PSMB7	-2.7	0.431584
keratin 5 (epidermolysis bullosa simplex, Dowling-Meara/Kobner/Weber-Cockayne type)	KRT5	-2.7	0.429991
casein kinase 2, alpha prime polypeptide	CSNK2A2	-2.8	0.423335
Human beta-1D integrin mRNA, cytoplasmic domain, partial cds	-	-2.8	0.420798
insulin-like growth factor binding protein 7	IGFBP7	-2.8	0.41824
glutathione peroxidase 4 (phospholipid hydroperoxidase)	GPX4	-2.8	0.416479
procollagen C-endopeptidase enhancer	PCOLCE	-2.8	0.415663
acid sphingomyelinase-like phosphodiesterase	ASM3A	-2.9	0.409443
transcription factor 3 (E2A immunoglobulin enhancer binding factors E12/E47)	TCF3	-2.9	0.407939
myosin VA (heavy polypeptide 12, myosin)	MYO5A	-2.9	0.406999
collagen-binding protein 2 (collagen 2)	CBP2	-2.9	0.406919
ESTs	-	-3	0.403708
proline-rich protein HaeIII subfamily 2	PRH2	-3	0.40356
small inducible cytokine A5 (RANTES)	SCYA5	-3	0.401409
dermatopontin	DPT	-3.1	0.393185
mucin 1, transmembrane	MUC1	-3.1	0.392827
HLA-G histocompatibility antigen, class I, G	HLA-G	-3.1	0.39248
actin related protein 2/3 complex, subunit 2 (34 kD)	ARPC2	-3.1	0.387402
aldehyde reductase 1 (low Km aldose reductase)	ALDR1	-3.1	0.386586
dihydrolipoamide dehydrogenase (E3 component of pyruvate dehydrogenase complex,	DLD	-3.1	0.385975
deoxynucleotidyltransferase, terminal	DNTT	-3.1	0.385795
Human AMP deaminase isoform L (AMPD2) mRNA, exons 6-18, partial cds	-	-3.2	0.384644
poly(A)-binding protein-like 1	PABPL1	-3.2	0.384462
collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)	COL3A1	-3.2	0.379288
cadherin 17, LI cadherin (liver-intestine)	CDH17	-3.3	0.374773
high-mobility group (nonhistone chromosomal) protein 1	HMG1	-3.4	0.364498
thioredoxin reductase 1	TXNRD1	-3.4	0.363802
collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congeni	COL2A1	-3.4	0.35638
thiosulfate sulfurtransferase (rhodanese)	TST	-3.5	0.34947

protein kinase C, iota	PRKCI	-3.5	0.346998
ESTs, Weakly similar to alpha-1(XVIII) collagen [M.musculus]	-	-3.6	0.336426
laminin receptor 1 (67kD, ribosomal protein SA)	LAMR1	-3.6	0.33513
EST, Moderately similar to cytochrome P450 3A4 nifedipine oxidase [H.sapiens]	-	-3.7	0.328626
cytochrome P450, subfamily IIB (phenobarbital-inducible), polypeptide 6	CYP2B6	-3.7	0.285643
SEC23-like protein B	SEC23B	-3.9	0.284173
Cytochrome P-450 superfamily/ Leutotriene B4 omega hydrolase	-	-4	0.242097
Collagen, type XI, alpha 1	-	-4.2	0.228666

42 y.o. ZZ Vs 32 y.o Control @ 24 hrs UPREGULATED

Ratio	Expression	gene	title
4.96914	4.97	MMP1	matrix metalloproteinase 1 (interstitial collagenase)
4.271812	4.27	MMP1	matrix metalloproteinase 1 (interstitial collagenase)
4.094903	4.09	GDN	CAG repeat containing (glia-derived nexin I alpha)
3.909336	3.91	GDN	CAG repeat containing (glia-derived nexin I alpha)
3.646519	3.65	GDN	CAG repeat containing (glia-derived nexin I alpha)
3.315479	3.32	GDN	CAG repeat containing (glia-derived nexin I alpha)
3.25901	3.26	KRT1	keratin 1 (epidermolytic hyperkeratosis)
2.567244	2.57	IL1A	interleukin 1, alpha
2.292757	2.29		ESTs, Highly similar to tyrosine phosphatase [H.sapiens]
2.260994	2.26	CYP1B1	cytochrome P450, subfamily I (dioxin-inducible), polypeptide 1 (glaucoma 3, primary infantile)
2.251838	2.25	MMP1	matrix metalloproteinase 1 (interstitial collagenase)
2.244897	2.24	AHR	aryl hydrocarbon receptor
2.137544	2.14		ESTs
2.113733	2.11	PRKDC	protein kinase, DNA-activated, catalytic polypeptide
2.074169	2.07	PMS2L12	postmeiotic segregation increased 2-like 12
2.056128	2.06	IL2RG	interleukin 2 receptor, gamma (severe combined immunodeficiency)
2.041558	2.04	KRT15	keratin 15
2.036588	2.04	ISLR	immunoglobulin superfamily containing leucine-rich repeat
2.004463	2.00	PPP3CA	protein phosphatase 3 (formerly 2B), catalytic subunit, alpha isoform (calcineurin A alpha)
1.968409	1.97	M60502	Profilaggrin - determined by alignment by Integriderm with gene M60502
1.96593	1.97	MYO7A	myosin VIIA (Usher syndrome 1B (autosomal recessive, severe))
1.964265	1.96	TEK	TEK tyrosine kinase, endothelial (venous malformations, multiple cutaneous and mucosal)
1.957805	1.96	COL1A2	collagen, type I, alpha 2
1.944879	1.94	ADH2	alcohol dehydrogenase 2 (class I), beta polypeptide
1.935682	1.94	COL1A2	collagen, type I, alpha 2
1.927684	1.93	MLLT7	myeloid/lymphoid or mixed-lineage leukemia (trithorax (Drosophila) homolog); translocated to, 7
1.900478	1.90	COL6A2	collagen, type VI, alpha 2
1.893831	1.89		ESTs
1.854165	1.85	SPINK1	serine protease inhibitor, Kazal type 1
1.843788	1.84	HSPB1	heat shock 27kD protein 1
1.841068	1.84		ESTs
1.837273	1.84	SRD5A2	steroid-5-alpha-reductase, alpha polypeptide 2 (3-oxo-5 alpha-steroid delta 4-dehydrogenase alpha 2)
1.816417	1.82	PAI1	plasminogen activator inhibitor, type I

42 y.o. ZZ Vs 32 y.o Control @ 24 hrs UPREGULATED

Ratio	Expression	gene	title
0.256401	-3.90		ESTs
0.285181	-3.51	BS69	adenovirus 5 E1A binding protein
0.327577	-3.05		ESTs
0.359838	-2.78	IL6	interleukin 6 (interferon, beta 2)
0.364745	-2.74		ESTs, Moderately similar to cysteine-rich fibroblast growth factor receptor [H.sapiens]
0.369488	-2.71	SAA1	serum amyloid A1
0.371283	-2.69	PRH2	proline-rich protein HaeIII subfamily 2
0.372303	-2.69	C3F	putative protein similar to nussy (Drosophila)
0.375326	-2.66		ESTs
0.382152	-2.62		ESTs
0.393508	-2.54		ESTs, Highly similar to ARYLSULFATASE D PRECURSOR [H.sapiens]
0.399796	-2.50	MLN64	steroidogenic acute regulatory protein related
0.411256	-2.43	VRK2	vaccinia related kinase 2
0.413581	-2.42	RGS6	regulator of G protein signalling 6
0.415099	-2.41	ACTG2	actin, gamma 2, smooth muscle, enteric
0.419201	-2.39	HTR3	5-hydroxytryptamine (serotonin) receptor 3
0.426152	-2.35	FGB	fibrinogen, B beta polypeptide
0.431886	-2.32		ESTs
0.437942	-2.28		ESTs
0.438867	-2.28		Human transcription factor junB (junB) gene, 5' region and complete cds
0.444564	-2.25		Human mRNA for heme oxygenase-2, complete cds
0.444578	-2.25		ESTs, Highly similar to NEUROLYSIN PRECURSOR [R.norvegicus]
0.446627	-2.24	EDN1	endothelin 1
0.447743	-2.23	WHITE1	ATP-binding cassette 8 (homolog of Drosophila white)
0.448236	-2.23		ESTs, Highly similar to keratin K5, 58K type II, epidermal [H.sapiens]

0.449317	-2.23		ESTs, Moderately similar to !!!! ALU CLASS C WARNING ENTRY !!!! [H.sapiens]
0.452835	-2.21	ITGAV	integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)
0.454227	-2.20		EST
0.454652	-2.20		EST
0.454863	-2.20	IL6	interleukin 6 (interferon, beta 2)
0.45506	-2.20	CLA20	clathrin-associated protein AP47 homolog 2
0.457241	-2.19		EST
0.457599	-2.19		ESTs
0.458078	-2.18		EST
0.461612	-2.17		ESTs
0.462895	-2.16	EDNRB	endothelin receptor type B
0.463106	-2.16	ZNF75	zinc finger protein 75 (D8C6)
0.465427	-2.15		ESTs, Highly similar to keratin K5, 58K type II, epidermal [H.sapiens]
0.471945	-2.12	RBBP1	retinoblastoma-binding protein 1
0.473173	-2.11	MSE55	serum constituent protein
0.477159	-2.10		Homo Sapiens mRNA, partial cDNA sequence from cDNA selection, DCR1-16.0
0.477361	-2.09	PTPRM	protein tyrosine phosphatase, receptor type, M
0.4783	-2.09	CASR	calcium-sensing receptor (hypocalciuric hypercalcemia 1, severe neonatal hyperparathyroidism)
0.479459	-2.09	COL9A3	collagen, type IX, alpha 3
0.485971	-2.06	ADCYAP1	adenylate cyclase activating polypeptide 1 (pituitary)
0.486739	-2.05		ESTs
0.487	-2.05	PTCH	patched (Drosophila) homolog
0.488643	-2.05		ESTs
0.48897	-2.05		ESTs
0.491778	-2.03	GDF10	growth differentiation factor 10
0.491778	-2.03	SLC15A2	solute carrier family 15 (H+/peptide transporter), member 2
0.493391	-2.03	MMP17	matrix metalloproteinase 17 (membrane-inserted)
0.494375	-2.02	NFIB	nuclear factor I/B
0.495277	-2.02	GJB1	gap junction protein, beta 1, 32kD (connexin 32, Charcot-Marie-Tooth neuropathy, X-linked)
0.496639	-2.01	MYBPC1	myosin-binding protein C, slow-type
0.496933	-2.01	SLC16A1	solute carrier family 16 (monocarboxylic acid transporters), member 1
0.497434	-2.01		ESTs
0.497652	-2.01	XRCC4	X-ray repair complementing defective repair in Chinese hamster cells 4
0.498053	-2.01	ANXA8	annexin A8
0.498971	-2.00	BICD1	Bicaudal D (Drosophila) homolog 1
0.499928	-2.00		ESTs
0.503788	-1.98	NVL	nuclear VCP-like
0.504925	-1.98		EST

42 y.o. Vstar @ 4hrs UPREGULATED

title	gene	Expression	Ratio
gastrin-releasing peptide	GRP	5.52	5.516981
ESTs, Highly similar to alpha-1 type XVI collagen [H.sapiens]	-	4.67	4.666049
Homo sapiens chromosome 19, cosmid R29942	-	3.97	3.965712
collagen, type VII, alpha 1 (epidermolysis bullosa, dystrophic, dominant and recessive)	-	3.74	3.744196
syntaxin 1A (brain)	COL7A1	3.37	3.368795
RNA helicase-related protein	STX1A	2.77	2.772917
ESTs, Moderately similar to TRISTETRAPROLINE [M.musculus]	RNAHP	2.73	2.73179
phorbol-12-myristate-13-acetate-induced protein 1	-	2.67	2.67471
TXK tyrosine kinase	PMAIP1	2.57	2.567491
LIM and SH3 protein 1	TXK	2.55	2.547028
serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), me	LASP1	2.46	2.462118
EST	SERPINA5	2.44	2.435359
phosphodiesterase 4C, cAMP-specific (dunce (Drosophila)-homolog phosphodiesterase	-	2.39	2.387185
activin A receptor, type II	PDE4C	2.33	2.334205
ESTs	ACVR2	2.33	2.329998
glucosamine (N-acetyl)-6-sulfatase (Sanfilippo disease IIID)	-	2.30	2.30281
single-strand selective monofunctional uracil DNA glycosylase	GNS	2.26	2.261811
serine protease inhibitor, Kazal type 1	SMUG1	2.24	2.239078
methionine aminopeptidase; eIF-2-associated p67	SPINK1	2.22	2.223644
paired box gene 6 (aniridia, keratitis)	MNPEP	2.21	2.213947
single-minded (Drosophila) homolog 2	PAX6	2.20	2.197107
collagen, type XV, alpha 1	SIM2	2.20	2.195669
v-myc avian myelocytomatosis viral related oncogene, neuroblastoma derived	COL15A1	2.18	2.181063
host cell factor C1 (VP16-accessory protein)	MYCN	2.17	2.172141
GRO1 oncogene (melanoma growth stimulating activity, alpha)	HCFC1	2.14	2.140785
protein-kinase, interferon-inducible double stranded RNA dependent inhibitor, repressor	GRO1	2.13	2.1343
ribophorin I	PRKRIR	2.13	2.125639
breast cancer 2, early onset	RPN1	2.10	2.10157
neurogranin (protein kinase C substrate, RC3)	BRCA2	2.10	2.096047
thiosulfate sulfurtransferase (rhodanese)	NRGN	2.09	2.09243
ESTs	TST	2.09	2.090018
hydroxysteroid (17-beta) dehydrogenase 1	-	2.06	2.058969
N-acetylneuraminic acid phosphate synthase; sialic acid synthase	HSD17B1	2.06	2.057766
KIAA1233 protein	SAS	2.06	2.056751
ESTs	KIAA1233	2.06	2.056053
Homo sapiens clone BCSynL38 immunoglobulin lambda light chain variable region mRNA	-	2.06	2.055387
TP53TG3 protein	-	2.04	2.039767
ESTs	TP53TG3	2.04	2.036007
arrestin, beta 1	-	2.03	2.032412
solute carrier family 16 (monocarboxylic acid transporters), member 1	ARRB1	2.00	2.002039
mitogen-activated protein kinase kinase kinase kinase 5	SLC16A1	1.97	1.972597
glypican 5	MAP4K5	1.97	1.970004
S100 calcium-binding protein A3	GPC5	1.96	1.957121
serum amyloid A1	S100A3	1.95	1.952841
ESTs	SAA1	1.95	1.952234
protamine 1	-	1.95	1.950536
proteasome (prosome, macropain) 26S subunit, non-ATPase, 10	PRM1	1.95	1.946419
ESTs, Weakly similar to !!!! ALU SUBFAMILY J WARNING ENTRY !!!! [H.sapiens]	PSMD10	1.94	1.941102
carbonic anhydrase XII	-	1.92	1.923365
cyclin G associated kinase	CA12	1.92	1.921888
ESTs, Weakly similar to neural variant mena+ protein [M.musculus]	GAK	1.92	1.91766
glutamate-cysteine ligase, catalytic subunit	-	1.92	1.915937
ESTs, Weakly similar to katanin p80 subunit [H.sapiens]	GCLC	1.91	1.913812
CD14 antigen	-	1.90	1.904491
Homo sapiens mRNA for KIAA0695 protein, complete cds	CD14	1.90	1.89719
glycine cleavage system protein H (aminomethyl carrier)	-	1.87	1.874394
ESTs	GCSH	1.86	1.863306
collagen, type IV, alpha 5 (Alport syndrome)	-	1.86	1.85534
phosphodiesterase 4C, cAMP-specific (dunce (Drosophila)-homolog phosphodiesterase	COL4A5	1.85	1.85427
gamma-aminobutyric acid (GABA) A receptor, alpha 2	PDE4C	1.85	1.84916
agouti (mouse)-signaling protein	GABRA2	1.84	1.843388
Homo sapiens gene for thymidylate synthase, exons 1, 2, 3, 4, 5, 6, 7, complete cds	ASIP	1.84	1.837508
Machado-Joseph disease (spinocerebellar ataxia 3, olivopontocerebellar ataxia 3, autos-	-	1.84	1.836545
ESTs	MJD		

formyl peptide receptor 1	-	1.83	1.830888
interferon-related developmental regulator 1	FPR1	1.83	1.828436
ESTs	IFRD1	1.83	1.825709
interleukin 11 receptor, alpha	-	1.82	1.816464
CD36 antigen (collagen type I receptor, thrombospondin receptor)	IL11RA	1.81	1.814581
vacuolar protein sorting 45B (yeast homolog)	CD36	1.81	1.808771
N-myristoyltransferase 1	VPS45B	1.81	1.808735
	NMT1	1.80	1.80211

42 y.o. Vstar @ 4hrs DOWNREGULATED

title

	gene	Expression	Ratio
vimentin	VIM	-9.86	0.10138
SEC23-like protein B	SEC23B	-7.28	0.137452
ribosomal protein S8	RPS8	-5.44	0.183735
mucin 1, transmembrane	MUC1	-5.36	0.186652
gap junction protein, alpha 1, 43kD (connexin 43)	GJA1	-5.00	0.200184
collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)	COL3A1	-4.67	0.214071
insulin-like growth factor binding protein 7	IGFBP7	-4.56	0.219128
Cytochrome P-450 superfamily/ Leutotriene B4 omega hydrolase	-	-4.36	0.229427
paired mesoderm homeo box 1	PMX1	-4.21	0.237459
collagen, type VI, alpha 2	COL6A2	-4.18	0.239058
laminin receptor 1 (67kD, ribosomal protein SA)	LAMR1	-4.17	0.240053
protein kinase C, iota	PRKC1	-3.97	0.251925
thymosin, beta 4, X chromosome	TMSB4X	-3.88	0.257787
dermatopontin	DPT	-3.85	0.259475
ubiquinol-cytochrome c reductase hinge protein	UQCRH	-3.79	0.263723
mannan-binding lectin serine protease 2	MASP2	-3.79	0.263869
collagen, type VI, alpha 2	COL6A2	-3.76	0.266139
ESTs, Highly similar to (define not available 4929647) [H.sapiens]	-	-3.72	0.268697
glucose regulated protein, 58kD	GRP58	-3.72	0.268925
matrix metalloproteinase 24 (membrane-inserted)	MMP24	-3.68	0.271653
procollagen C-endopeptidase enhancer	-	-3.68	0.271947
ESTs, Highly similar to ALPHA-1,6-MANNOSYL-GLYCOPROTEIN BETA-1,2-N-ACETYL PCOLCE	-	-3.64	0.274748
ribosomal protein L30	RPL30	-3.63	0.27537
keratin 10 (epidermolytic hyperkeratosis; keratosis palmaris et plantaris)	KRT10	-3.54	0.282133
transcription factor 3 (E2A immunoglobulin enhancer binding factors E12/E47)	TCF3	-3.53	0.282945
collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)	COL3A1	-3.52	0.284039
ribosomal protein L18a	RPL18A	-3.44	0.290434
deoxynucleotidyltransferase, terminal	DNTT	-3.42	0.292306
collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenit)	COL2A1	-3.41	0.293325
collagen-binding protein 2 (colligen 2)	CBP2	-3.40	0.293835
S100 calcium-binding protein A10 (annexin II ligand, calpactin I, light polypeptide (p11))	S100A10	-3.39	0.294997
HLA-G histocompatibility antigen, class I, G	HLA-G	-3.32	0.301038
matrix metalloproteinase 1 (interstitial collagenase)	MMP1	-3.32	0.301355
collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenit)	COL2A1	-3.31	0.301877
tumor necrosis factor receptor superfamily, member 11b (osteoprotegerin)	TNFRSF11	-3.27	0.305631
cyclin D1 (PRAD1: parathyroid adenomatosis 1)	CCND1	-3.27	0.306178
ribosomal protein L18	RPL18	-3.26	0.306452
integrin, alpha L (antigen CD11A (p180), lymphocyte function-associated antigen 1; alph	ITGAL	-3.26	0.306769
tubulin, alpha, ubiquitous	K-ALPHA-	-3.25	0.308158
aldehyde reductase 1 (low Km aldose reductase)	ALDR1	-3.24	0.308541
Cytochrome P450/ Lanosterol 14 demethylase	-	-3.23	0.309764
procollagen C-endopeptidase enhancer	PCOLCE	-3.22	0.31027
EST, Weakly similar to unnamed protein product [H.sapiens]	-	-3.22	0.310647
beta-2-microglobulin	B2M	-3.16	0.316866
ESTs	-	-3.10	0.32257
ESTs	-	-3.06	0.326301
ESTs, Highly similar to extracellular protein [H.sapiens]	-	-3.06	0.326582
cadherin 11 (OB-cadherin, osteoblast)	CDH11	-3.06	0.326767
collagen, type XIV, alpha 1; undulin	COL14A1	-3.05	0.32807
procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypep	P4HB	-3.04	0.329078
collagen, type VI, alpha 3	COL6A3	-3.03	0.33029
proteasome (prosome, macropain) subunit, beta type, 5	PSMB5	-3.03	0.330524
collagen, type IV, alpha 1	COL4A1	-2.98	0.336058
ESTs	-	-2.97	0.336167
Collagen, type XI, alpha 1	-	-2.96	0.337463
matrix metalloproteinase 1 (interstitial collagenase)	-	-2.96	0.337463

procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypept	MMP1	-2.95	0.33918
sulfotransferase family, cytosolic, 2B, member 1	P4HB	-2.94	0.340421
collagen, type VI, alpha 2	SULT2B1	-2.93	0.340749
glutathione S-transferase pi	COL6A2	-2.93	0.341035
keratin 19	GSTP1	-2.93	0.341763
small inducible cytokine A5 (RANTES)	KRT19	-2.87	0.348448
leupaxin	SCYA5	-2.86	0.349495
hexabrachion (tenascin C, cytactin)	LDPL	-2.86	0.350117
Homo sapiens cosmid clone LUCA14 from 3p21.3	HXB	-2.85	0.350518
laminin, alpha 4	-	-2.85	0.351427
collagen, type VI, alpha 1	LAMA4	-2.82	0.354451
solute carrier family 4, anion exchanger, member 2 (erythrocyte membrane protein band	COL6A1	-2.81	0.356251
tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta polype	SLC4A2	-2.80	0.357489
ESTs, Weakly similar to cDNA EST EMBL:M89154 comes from this gene [C.elegans]	YWHAQ	-2.79	0.35869
calpain, small polypeptide	-	-2.79	0.358933
breast cancer 1, early onset	CAPN4	-2.78	0.359546
S100 calcium-binding protein A10 (annexin II ligand, calpactin I, light polypeptide (p11))	BRCA1	-2.78	0.359985
ESTs, Moderately similar to RS17_HUMAN 40S RIBOSOMAL PROTEIN S1 [H.sapiens]	S100A10	-2.78	0.360285
ribosomal protein L35a	-	-2.77	0.360554
adaptor-related protein complex 3, sigma 2 subunit	RPL35A	-2.77	0.361176
methionine adenosyltransferase II, alpha	AP3S2	-2.76	0.362671
major histocompatibility complex, class I, C	MAT2A	-2.74	0.364929
EST	HLA-C	-2.74	0.364987
procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypept	-	-2.72	0.367039
thioredoxin reductase 1	P4HB	-2.72	0.36705
ESTs, Highly similar to AF279865 1 kinesin-like protein GAKIN [H.sapiens]	TXNRD1	-2.72	0.36745
calcium channel, voltage-dependent, alpha 1I subunit	-	-2.72	0.367813
Human DNA from chromosome 19-specific cosmid F25965, genomic sequence	CACNA1I	-2.72	0.367841
T cell activation, increased late expression	-	-2.72	0.367928
collagen-binding protein 2 (collagen 2)	TACTILE	-2.72	0.368031
eukaryotic translation initiation factor 3, subunit 2 (beta, 36kD)	CBP2	-2.71	0.368642
collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)	EIF3S2	-2.70	0.369689
ribosomal protein S27a	COL3A1	-2.69	0.371062
caspase 6, apoptosis-related cysteine protease	RPS27A	-2.69	0.371995
secreted protein, acidic, cysteine-rich (osteonectin)	CASP6	-2.68	0.373051
aspartyl-tRNA synthetase	SPARC	-2.68	0.373172
superoxide dismutase 1, soluble (amyotrophic lateral sclerosis 1 (adult))	DARS	-2.67	0.374536
lactate dehydrogenase B	SOD1	-2.67	0.375051
EST	LDHB	-2.65	0.377445
collagen, type V, alpha 1	-	-2.64	0.378076
keratin 18	COL5A1	-2.64	0.378099
Cytochrome P-450 superfamily/ Leutotriene B4 omega hydrolase	KRT18	-2.64	0.378501
collagen, type I, alpha 2	-	-2.63	0.37956
RAB7, member RAS oncogene family-like 1	COL1A2	-2.63	0.380265
major histocompatibility complex, class I, C	RAB7L1	-2.63	0.38081
ESTs	HLA-C	-2.62	0.380996
high-mobility group (nonhistone chromosomal) protein 1	-	-2.62	0.381077
cholinergic receptor, muscarinic 3	HMG1	-2.62	0.381512
protective protein for beta-galactosidase (galactosialidosis)	CHRM3	-2.62	0.381791
complement component 7	PPGB	-2.62	0.382047
CAG repeat containing (glia-derived nexin I alpha)	C7	-2.61	0.382415
CAG repeat containing (glia-derived nexin I alpha)	GDN	-2.59	0.386196
ESTs	GDN	-2.58	0.387304
splicing factor, arginine/serine-rich 2	-	-2.58	0.38776
poly(A)-binding protein-like 1	SFRS2	-2.58	0.387851
inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma	PABPL1	-2.57	0.388391
ribosomal protein S15a	IKBK	-2.57	0.388752
t-complex-associated-testis-expressed 1-like 1	RPS15A	-2.57	0.389707
ESTs	TCTEL1	-2.56	0.390847
outer dense fibre of sperm tails 2	-	-2.56	0.391206
hepatocyte nuclear factor 3, beta	ODF2	-2.56	0.391219
keratin 6B	HNF3B	-2.55	0.39176
collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)	KRT6B	-2.55	0.391828
inactive progesterone receptor, 23 kD	COL3A1	-2.55	0.391833
ESTs, Highly similar to RL10_HUMAN 60S RIBOSOMAL PROTEIN L10 [H.sapiens]	P23	-2.55	0.392641
transcription elongation factor B (SIII), polypeptide 2 (18kD, elongin B)	-	-2.53	0.39552

folypolyglutamate synthase	TCEB2	-2.52	0.397407
Rho GDP dissociation inhibitor (GDI) alpha	FPGS	-2.51	0.399195
proliferation-associated 2G4, 38kD	ARHGDI	-2.50	0.400436
collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenita)	PA2G4	-2.49	0.400844
ESTs, Highly similar to 6-PHOSPHOGLUCONATE DEHYDROGENASE, DECARBOXYL COL2A1	-	-2.49	0.402397
core promoter element binding protein	-	-2.47	0.40455
ribosomal protein L44	COPEB	-2.47	0.405051
small nuclear ribonucleoprotein polypeptides B and B1	RPL44	-2.46	0.405742
polymerase (RNA) II (DNA directed) polypeptide L (7.6kD)	SNRPB	-2.46	0.405915
RNA helicase-related protein	POLR2L	-2.46	0.406541
zinc finger protein 6 (CMPX1)	RNAHP	-2.46	0.40657
ESTs	ZNF6	-2.46	0.406771
ESTs	-	-2.46	0.407038
adrenomedullin	-	-2.45	0.408156
neural precursor cell expressed, developmentally down-regulated 5	ADM	-2.45	0.408621
KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention receptor 2	NEDD5	-2.45	0.408781
tropomyosin 2 (beta)	KDELR2	-2.44	0.409289
guanine nucleotide binding protein (G protein), gamma 5	TPM2	-2.44	0.410024
proteasome (prosome, macropain) subunit, alpha type, 7	GNG5	-2.44	0.410384
annexin A1	PSMA7	-2.43	0.410775
X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-b	ANXA1	-2.43	0.41181
adenine nucleotide translocator 3 (liver)	XRCC5	-2.43	0.412035
Cytochrome P450, subfamily XVII (steroid 17-alpha-hydroxylase), adrenal hyperplasia	ANT3	-2.42	0.412587
insulin-like growth factor binding protein 3	-	-2.42	0.412781
neuro-oncological ventral antigen 1	IGFBP3	-2.42	0.412821
ESTs, Moderately similar to S30212 ribosomal protein L7 [H.sapiens]	NOVA1	-2.42	0.412967
inositol polyphosphate-5-phosphatase, 75kD	-	-2.42	0.413125
RNA binding motif protein 3	INPP5B	-2.42	0.413697
ESTs	RBM3	-2.41	0.414401
cyclin-dependent kinase 4	-	-2.41	0.414404
ribosomal protein L24	CDK4	-2.41	0.415565
keratin 15	RPL24	-2.40	0.416315
CD36 antigen (collagen type I receptor, thrombospondin receptor)	KRT15	-2.40	0.41646
glycoprotein 2 (zymogen granule membrane)	CD36	-2.40	0.416754
ribosomal protein S25	GP2	-2.40	0.417057
cytochrome P450, subfamily IVF, polypeptide 3 (leukotriene B4 omega hydroxylase)	RPS25	-2.39	0.417635
histamine receptor H1	CYP4F3	-2.38	0.419637
KIAA0058 gene product	HRH1	-2.38	0.420656
Human beta-1D integrin mRNA, cytoplasmic domain, partial cds	DAZAP2	-2.37	0.421641
superoxide dismutase 1, soluble (amyotrophic lateral sclerosis 1 (adult))	-	-2.37	0.422067
metallothionein 1E (functional)	SOD1	-2.37	0.422158
golgi-specific brefeldin A resistance factor 1	MT1E	-2.37	0.422348
interleukin 10 receptor, beta	GBF1	-2.36	0.424567
actin related protein 2/3 complex, subunit 2 (34 kD)	IL10RB	-2.35	0.425378
neuroblastoma candidate region, suppression of tumorigenicity 1	ARPC2	-2.34	0.426678
heat shock 70kD protein 8	NBL1	-2.34	0.426713
thymosin, beta 4, X chromosome	HSPA8	-2.34	0.42687
metallothionein 1E (functional)	TMSB4X	-2.34	0.427434
eukaryotic translation initiation factor 3, subunit 6 (48kD)	MT1E	-2.34	0.428037
ribosomal protein S13	EIF3S6	-2.33	0.428274
keratin 5 (epidermolysis bullosa simplex, Dowling-Meara/Kobner/Weber-Cockayne types	RPS13	-2.33	0.428662
syntaxin binding protein 1	KRT5	-2.33	0.428677
zinc finger protein homologous to Zfp92 in mouse	STXBP1	-2.33	0.429257
low density lipoprotein-related protein-associated protein 1 (alpha-2-macroglobulin recep	ZFP92	-2.33	0.429894
offactomedin related ER localized protein	LRPAP1	-2.32	0.430157
ESTs	NOE1	-2.32	0.430701
ESTs	-	-2.32	0.430731
NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 4 (15kD, B15)	-	-2.32	0.430829
cholinesterase-related cell division controller	NDUFB4	-2.32	0.431121
high-mobility group (nonhistone chromosomal) protein 17	CDC2L	-2.32	0.431377
phospholipase A2, group VI (cytosolic, calcium-independent)	HMG17	-2.32	0.431819
acidic protein rich in leucines	PLA2G6	-2.31	0.432814
dihydrolipoamide dehydrogenase (E3 component of pyruvate dehydrogenase complex, 2	SSP29	-2.31	0.433119
tropomyosin 2 (beta)	DLD	-2.31	0.433219
myeloid cell leukemia sequence 1 (BCL2-related)	TPM2	-2.31	0.433332
eukaryotic translation initiation factor 3, subunit 4 (delta, 44kD)	MCL1	-2.31	0.433337

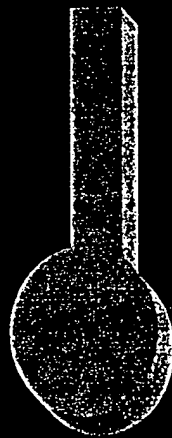
copine VI (neuronal)	EIF3S4	-2.30	0.433943
ribosomal protein L6	CPNE6	-2.30	0.434581
casein kinase 2, alpha prime polypeptide	RPL6	-2.30	0.435038
HLA-G histocompatibility antigen, class I, G	CSNK2A2	-2.30	0.435568
protein tyrosine phosphatase type IVA, member 2	HLA-G	-2.29	0.435902
annexin A4	PTP4A2	-2.29	0.436321
SULT1C sulfotransferase	ANXA4	-2.29	0.437125
collagen, type VI, alpha 3	SULT1C2	-2.29	0.437314
keratin 8	COL6A3	-2.29	0.437593
ESTs	KRT8	-2.28	0.438339
EST, Moderately similar to collagen alpha 5(IV) chain precursor, renal splice form [H.sap]	-	-2.28	0.438364
ESTs	-	-2.28	0.438994
carbamoyl transferase	-	-2.28	0.439243
pim-2 oncogene	CRAT	-2.27	0.439771
cold shock domain protein A	PIM2	-2.27	0.440164
interleukin 1 receptor antagonist	CSDA	-2.27	0.440282
actin related protein 2/3 complex, subunit 3 (21 kD)	IL1RN	-2.26	0.441996
Meis (mouse) homolog 2	ARPC3	-2.26	0.442215
sulfotransferase family 1A, phenol-preferring, member 3	MEIS2	-2.26	0.44232
ESTs	SULT1A3	-2.26	0.442334
ESTs	-	-2.26	0.442389
collagen, type I, alpha 2	-	-2.26	0.442519
NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 1 (7.5kD, MWFE)	COL1A2	-2.25	0.443671
ribosomal protein S27 (metalloproteinase 1)	NDUFA1	-2.25	0.444285
thymosin, beta 4, X chromosome	RPS27	-2.25	0.444416
annexin A1	TMSB4X	-2.25	0.444722
arachidonate 15-lipoxygenase, second type	ANXA1	-2.25	0.444729
insulin-like growth factor binding protein 3	ALOX15B	-2.25	0.445018
H2A histone family, member Z	IGFBP3	-2.25	0.445397
ESTs	H2AFZ	-2.24	0.445882
ESTs	-	-2.24	0.445888
heterogeneous nuclear ribonucleoprotein R	-	-2.24	0.446119
ESTs	HNRPR	-2.24	0.446194
adrenergic, beta, receptor kinase 1	-	-2.24	0.446198
S100 calcium-binding protein A13	ADRBK1	-2.24	0.446262
keratin 7	S100A13	-2.23	0.447739
Cytochrome P450, subfamily XVII (steroid 17-alpha-hydroxylase), adrenal hyperplasia	KRT7	-2.23	0.448409
ESTs, Highly similar to NRG2_HUMAN PRO-NEUREGULIN-2 PRECURSOR [H.sapiens]	-	-2.23	0.449135
keratin 10 (epidermolytic hyperkeratosis; keratosis palmaris et plantaris)	-	-2.23	0.449389
insulin-like growth factor binding protein 7	KRT10	-2.22	0.449454
cytochrome c oxidase subunit VIIb	IGFBP7	-2.22	0.449463
sarcoglycan, beta (43kD dystrophin-associated glycoprotein)	COX7B	-2.22	0.449539
ribosomal protein L6	SGCB	-2.22	0.44972
ESTs, Moderately similar to RL2B_HUMAN 60S RIBOSOMAL PROTEIN L23A [H.sapiens]	RPL6	-2.22	0.449805
tumor rejection antigen (gp96) 1	-	-2.22	0.449857
baculoviral IAP repeat-containing 1	TRA1	-2.22	0.449892
EST, Moderately similar to cytochrome P450 3A4 nifedipine oxidase [H.sapiens]	BIRC1	-2.22	0.450355
ubiquitin-activating enzyme E1 (A1S9T and BN75 temperature sensitivity complementing)	-	-2.21	0.451603
matrix metalloproteinase 1 (interstitial collagenase)	UBE1	-2.21	0.451883
Homo sapiens mRNA for KIAA0607 protein, partial cds	MMP1	-2.21	0.451924
ribosomal protein L7a	-	-2.21	0.452621
tumor necrosis factor receptor superfamily, member 11b (osteoprotegerin)	RPL7A	-2.21	0.453221
S100 calcium-binding protein A10 (annexin II ligand, calpactin I, light polypeptide (p11))	TNFRSF1	-2.21	0.45348
bone morphogenetic protein 8 (osteogenic protein 2)	S100A10	-2.21	0.453483
sulfotransferase family, cytosolic, 1C, member 1	BMP8	-2.20	0.455504
hepatic leukemia factor	SULT1C1	-2.19	0.455954
Cytochrome P450, subfamily XVII (steroid 17-alpha-hydroxylase), adrenal hyperplasia	HLF	-2.19	0.456031
proline-rich protein HaeIII subfamily 2	-	-2.19	0.456179
proteasome (prosome, macropain) subunit, beta type, 7	PRH2	-2.19	0.456638
calpain 2, (mII) large subunit	PSMB7	-2.19	0.456823
malate dehydrogenase 1, NAD (soluble)	CAPN2	-2.19	0.456879
ESTs	MDH1	-2.19	0.456961
SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily d	-	-2.19	0.457301
Human beta-1D integrin mRNA, cytoplasmic domain, partial cds	SMARCD2	-2.19	0.457654
lymphocyte antigen 6 complex, locus E	-	-2.18	0.45777
ESTs, Weakly similar to similar to Schizosaccharomyces pombe 4-nitrophenylphosphatase LY6E	-	-2.18	0.458076

CAG repeat containing (glia-derived nexin I alpha)	-	-2.18	0.45827	-
Collagen, type XI, alpha 1	GDN	-2.18	0.458339	
metallothionein 1G	-	-2.18	0.458419	
Human mRNA for template activating factor-I alpha, complete cds	MT1G	-2.18	0.458928	
annexin A4	-	-2.18	0.459241	
proliferation-associated 2G4, 38kD	ANXA4	-2.17	0.460873	
signal recognition particle receptor ('docking protein')	PA2G4	-2.17	0.461067	
signal recognition particle 54kD	SRPR	-2.17	0.461245	
chaperonin containing TCP1, subunit 4 (delta)	SRP54	-2.16	0.462527	
ESTs, Weakly similar to sco-spondin-mucin-like [H.sapiens]	CCT4	-2.16	0.463079	
matrix metalloproteinase 2 (gelatinase A, 72kD gelatinase, 72kD type IV collagenase)	-	-2.16	0.463186	
intercellular adhesion molecule 3	MMP2	-2.16	0.463311	
tumor necrosis factor receptor superfamily, member 11b (osteoprotegerin)	ICAM3	-2.16	0.463645	
proteasome (prosome, macropain) subunit, beta type, 2	TNFRSF1	-2.15	0.464046	
glucocorticoid-induced leucine zipper	PSMB2	-2.15	0.464306	
cyclin-dependent kinase 5	GILZ	-2.15	0.464337	
CAG repeat containing (glia-derived nexin I alpha)	CDK5	-2.15	0.464502	
thymosin, beta 4, X chromosome	GDN	-2.15	0.465348	
keratin 18	TMSB4X	-2.15	0.465595	
ornithine aminotransferase (gyrate atrophy)	KRT18	-2.15	0.465903	
ESTs	OAT	-2.15	0.466006	
spectrin, beta, non-erythrocytic 1	-	-2.15	0.466008	
nuclear antigen Sp100	SPTBN1	-2.15	0.466114	
myeloid leukemia factor 2	SP100	-2.14	0.466204	
Homo sapiens cDNA FLJ14186 fis, clone NT2RP2005726	MLF2	-2.14	0.466452	
Human mRNA for hepatoma-derived growth factor, complete cds	-	-2.14	0.467012	
cytochrome P450, subfamily IIB (phenobarbital-inducible), polypeptide 6	HDGF	-2.14	0.467443	
succinate dehydrogenase complex, subunit C, integral membrane protein, 15kD	CYP2B6	-2.14	0.468334	
major histocompatibility complex, class I, C	SDHC	-2.13	0.468496	
Homo sapiens cDNA FLJ12163 fis, clone MAMMA1000594	HLA-C	-2.13	0.469276	
ribosomal protein S28	-	-2.13	0.469434	
heat shock 70kD protein 2	RPS28	-2.13	0.469735	
CAAX box 1	HSPA2	-2.13	0.470434	
antigen identified by monoclonal antibodies 12E7, F21 and O13	CXX1	-2.13	0.470504	
EH domain containing 1	MIC2	-2.12	0.470748	
calnexin	EHD1	-2.12	0.470791	
interferon-related developmental regulator 1	CANX	-2.12	0.471285	
hepatic leukemia factor	IFRD1	-2.12	0.471545	
putative protein similar to nessy (Drosophila)	HLF	-2.12	0.472206	
phosphoglycerate dehydrogenase	C3F	-2.12	0.472368	
protein phosphatase 1, regulatory subunit 10	PHGDH	-2.12	0.47245	
rasi-1 matrix metalloproteinase RASI-1 mRNA, complete cds	PPP1R10	-2.12	0.472693	
Homo sapiens cDNA FLJ10532 fis, clone NT2RP2001044	-	-2.11	0.473346	
ESTs	-	-2.11	0.473746	
beta-2-microglobulin	-	-2.11	0.474933	
collagen, type VI, alpha 1	B2M	-2.10	0.475254	
cadherin 13, H-cadherin (heart)	COL6A1	-2.10	0.475548	
actin related protein 2/3 complex, subunit 1A (41 kD)	CDH13	-2.10	0.476189	
major histocompatibility complex, class I, C	ARPC1B	-2.10	0.476623	
ESTs	HLA-C	-2.10	0.476684	
ESTs	-	-2.09	0.477452	
sulfotransferase family, cytosolic, 1C, member 2	-	-2.09	0.478253	
adenosine deaminase	SULT1C2	-2.09	0.478736	
hexabrachion (tenascin C, cytactin)	ADA	-2.09	0.478868	
insulin-like growth factor 2 receptor	HXB	-2.09	0.479237	
proteasome (prosome, macropain) subunit, alpha type, 5	IGF2R	-2.09	0.479407	
ATP synthase, H+ transporting, mitochondrial F0 complex, subunit c (subunit 9) isoform	PSMA5	-2.08	0.479654	
ESTs	ATP5G3	-2.08	0.479874	
ESTs	-	-2.08	0.480243	
Leucine-zipper-like regulator-1	-	-2.08	0.480548	
synaptopodin	LZTR1	-2.08	0.480908	
phosphoprotein enriched in astrocytes 15	KIAA1029	-2.08	0.480917	
N-myc downstream regulated	PEA15	-2.08	0.481039	
protein kinase C, mu	NDRG1	-2.08	0.48112	
chondroitin sulfate proteoglycan 2 (versican)	PRKCM	-2.08	0.481742	
small inducible cytokine A5 (RANTES)	CSPG2	-2.07	0.482488	

Interferon-inducible	SCYA5	-2.07	0.483409
Human phospholipase D mRNA, complete cds	1-8D	-2.07	0.483441
Insulin-like growth factor binding protein 7	-	-2.07	0.483457
small inducible cytokine subfamily A (Cys-Cys), member 25	IGFBP7	-2.07	0.483604
collagen, type V, alpha 2	SCYA25	-2.07	0.483993
nuclear receptor coactivator 4	COL5A2	-2.07	0.484157
annexin A11	NCOA4	-2.06	0.484933
CREB binding protein (Rubinstein-Taybi syndrome)	ANXA11	-2.06	0.485943
protein phosphatase 1, catalytic subunit, alpha isoform	CREBBP	-2.06	0.486015
metallothionein 1G	PPP1CA	-2.06	0.486231
protein translocation complex beta	MT1G	-2.06	0.486252
Tubulin, alpha, brain-specific	SEC61B	-2.06	0.486268
osteoblast specific factor 2 (fasciclin I-like)	TUBA3	-2.06	0.486278
microtubule-associated protein 1B	OSF-2	-2.06	0.486554
MAD (mothers against decapentaplegic, Drosophila) homolog interacting protein, receptor	MAP1B	-2.05	0.486778
cytochrome P450, subfamily VIIb (oxysterol 7 alpha-hydroxylase), polypeptide 1	MADHIP	-2.05	0.486881
modulator recognition factor 1	CYP7B1	-2.05	0.48719
Homo sapiens EST00098 gene, last exon	MRF-1	-2.05	0.487668
gene from NF2/meningioma region of 22q12	-	-2.05	0.488102
ribosomal protein S16	PK1.3	-2.05	0.488922
collagen, type V, alpha 1	RPS16	-2.04	0.489046
prostaglandin E receptor 2 (subtype EP2), 53kD	COL5A1	-2.04	0.489176
ESTs	PTGER2	-2.04	0.489377
KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention receptor 2	-	-2.04	0.489445
matrix metalloproteinase 2 (gelatinase A, 72kD gelatinase, 72kD type IV collagenase)	KDELRL2	-2.04	0.489825
neurotrophic tyrosine kinase, receptor-related 1	MMP2	-2.04	0.490541
ESTs	NTRKR1	-2.04	0.490768
nuclear receptor subfamily 2, group F, member 6	-	-2.04	0.491362
cathepsin K (pseudosclerosis)	NR2F6	-2.03	0.492238
hypothetical protein DKFZp761D2324	CTSK	-2.03	0.492932
collagen, type VI, alpha 1	DKFZP761	-2.03	0.493156
collapsin response mediator protein 1	COL6A1	-2.03	0.493391
early development regulator 2 (homolog of polyhomeotic 2)	CRMP1	-2.03	0.493567
interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor)	EDR2	-2.03	0.493611
CD209 antigen-like	IL12A	-2.03	0.493663
sulfotransferase family 2B, member 1	CD209L	-2.03	0.493702
laminin, alpha 4	SULT2B1	-2.02	0.493965
RNA helicase-related protein	LAMA4	-2.02	0.494227
cytochrome c oxidase subunit Va	RNAHP	-2.02	0.494802
ADP-ribosylation factor 3	COX5A	-2.02	0.494847
nuclear factor of kappa light polypeptide gene enhancer in B-cells 1 (p105)	ARF3	-2.02	0.495471
cadherin 17, LI cadherin (liver-intestine)	NFKB1	-2.02	0.495633
coatamer protein complex, subunit beta	CDH17	-2.02	0.496044
Homo sapiens clone 23698 mRNA sequence	COPB	-2.02	0.496054
early growth response 1	-	-2.01	0.496295
protein tyrosine phosphatase, receptor type, C	EGR1	-2.01	0.497325
oxygen regulated protein (150kD)	PTPRC	-2.01	0.497453
small inducible cytokine A2 (monocyte chemotactic protein 1, homologous to mouse Sig	ORP150	-2.01	0.497561
serine (or cysteine) proteinase inhibitor, clade G (C1 inhibitor), member 1	SCYA2	-2.01	0.497612
EST, Moderately similar to cytochrome P450 3A4 nifedipine oxidase [H.sapiens]	SERPING	-2.01	0.497769
hepatocyte nuclear factor 3, beta	-	-2.01	0.497962
Human putative cyclin G1 interacting protein mRNA, partial sequence	HNF3B	-2.01	0.498044
proliferating cell nuclear antigen	-	-2.01	0.498335
ESTs	PCNA	-2.01	0.498461
cytochrome P450, subfamily I (dioxin-inducible), polypeptide 1 (glaucoma 3, primary infra	-	-2.01	0.498469
ESTs	CYP1B1	-2.00	0.499265
cytochrome c oxidase subunit Vb	-	-2.00	0.49977
ribosomal protein L36a	COX5B	-2.00	0.499954
solute carrier family 31 (copper transporters), member 1	RPL36A	-2.00	0.500136
Homo sapiens clone 23728 mRNA sequence	SLC31A1	-2.00	0.500372
EST	-	-2.00	0.500395
syntaxin binding protein 1	-	-2.00	0.500402
EST	STXBP1	-2.00	0.500676
von Hippel-Lindau syndrome	-	-2.00	0.501074
	VHL	-2.00	0.501192

PHOTOMODULATION

PHOTOTHERAPY 401.7313



Non-Ablative

Non-Ablative

Ablative

"Very Low Level"

"Lower Level Energy"

"Higher Level Energy"

Selective

Selective

Selective

Photomodulation

Non-ablative

Photothermolysis

Non-selective
Photothermolysis

Photo-
biochemical

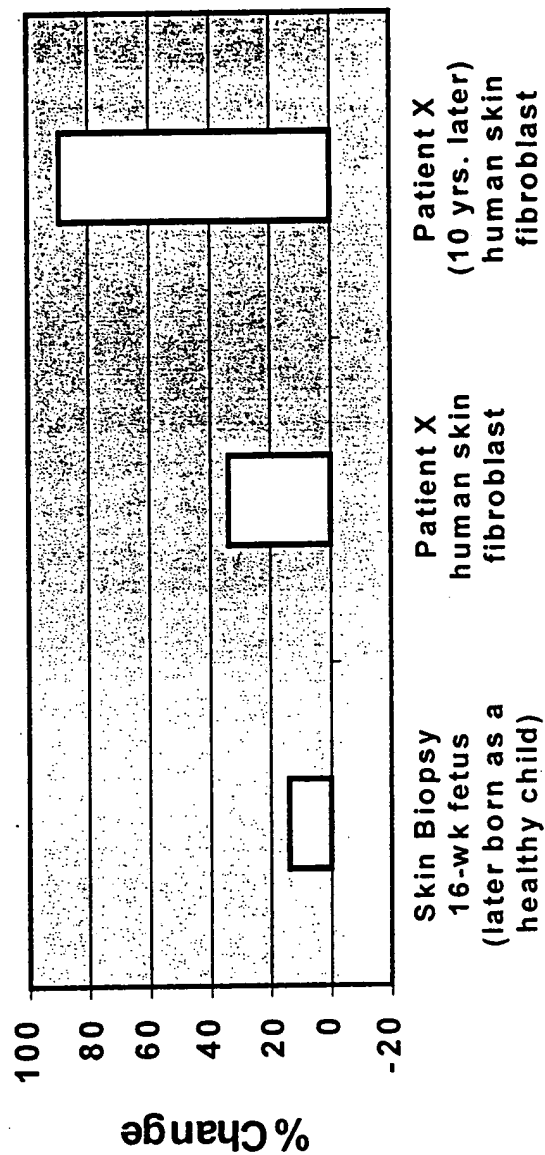
Photo-
thermal

Photo-
coagulation

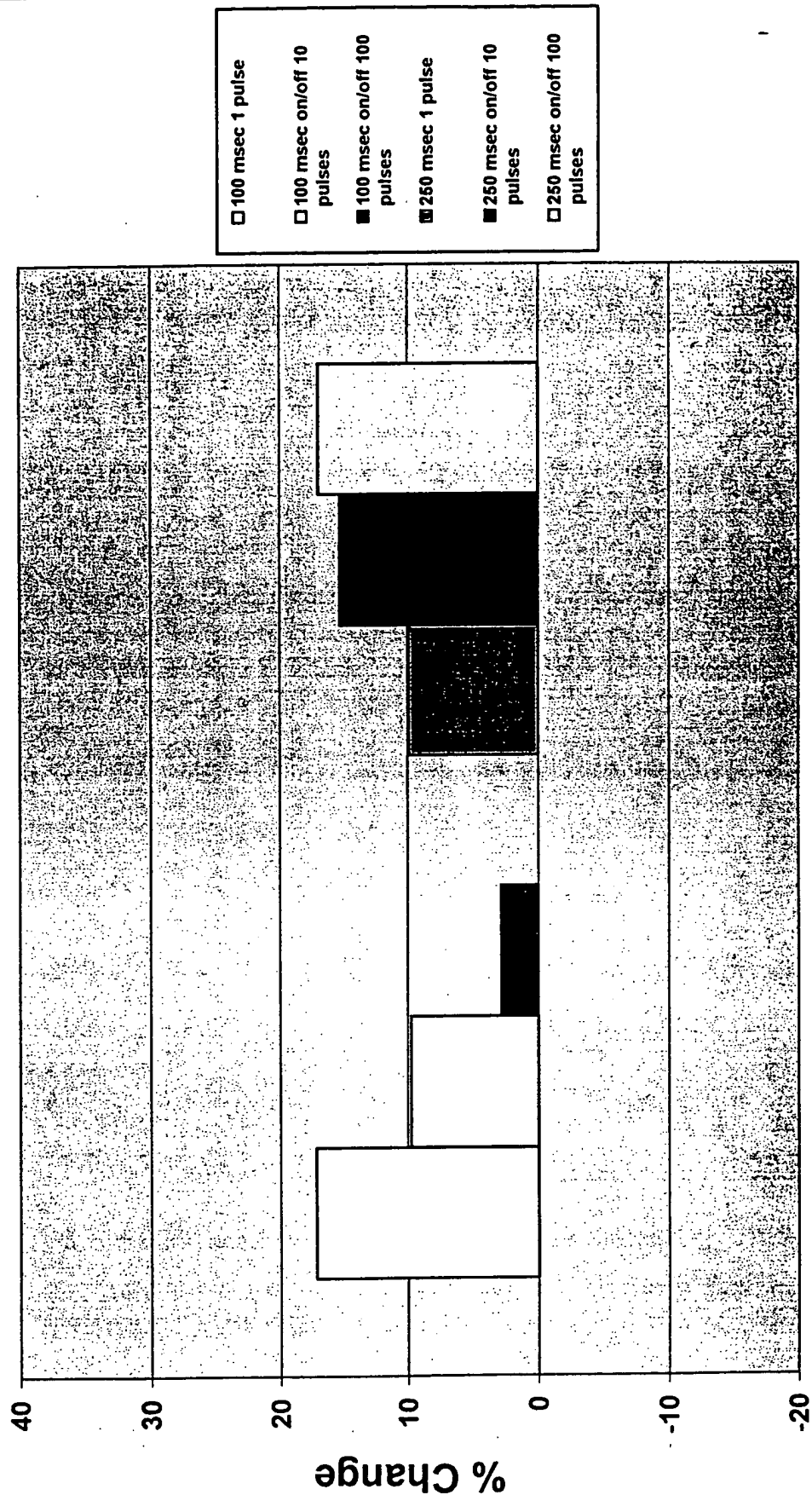
Photo-
vaporization

Tissue Culture Human Fibroblast Assay

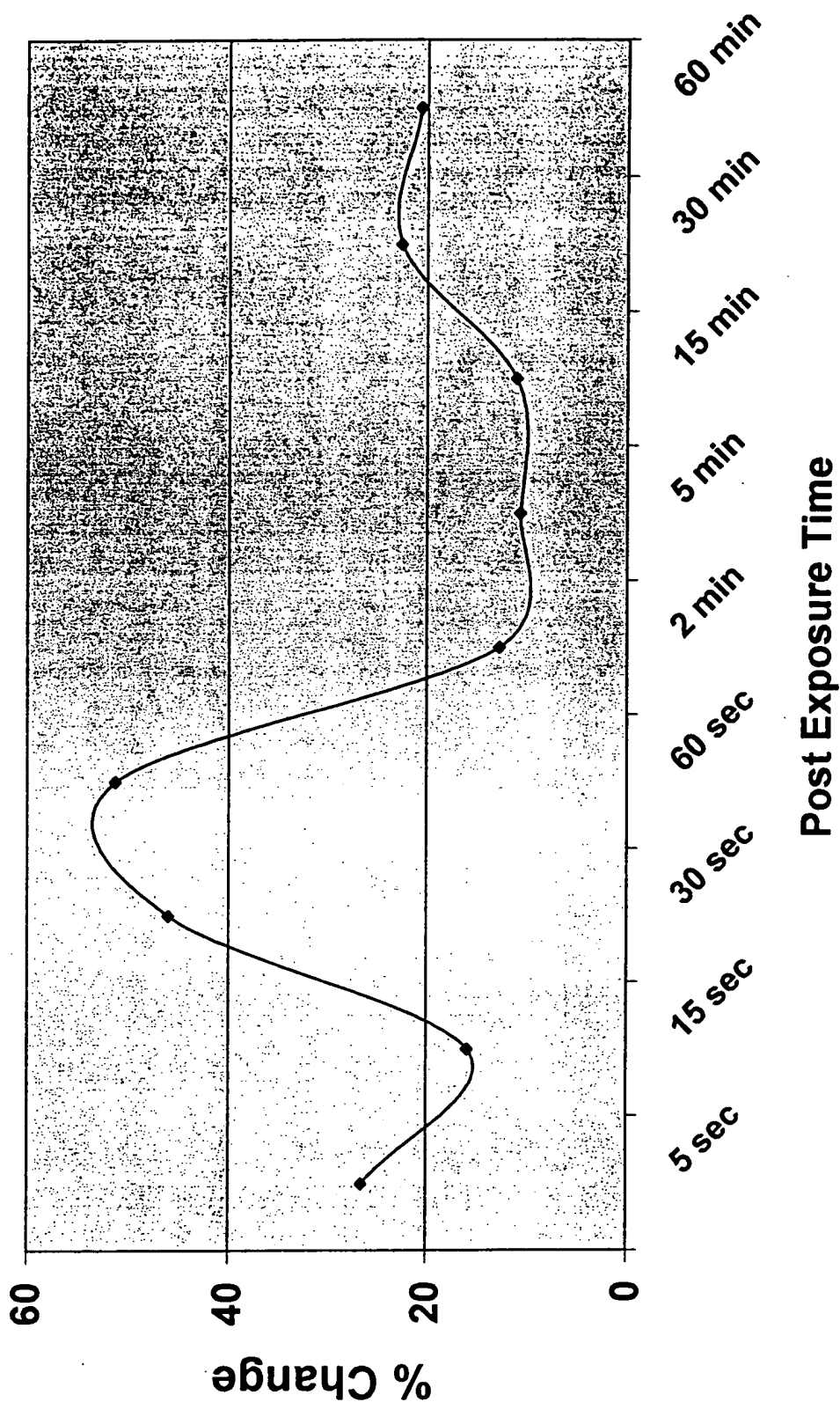
% Increase in Collagen from Photomodulation



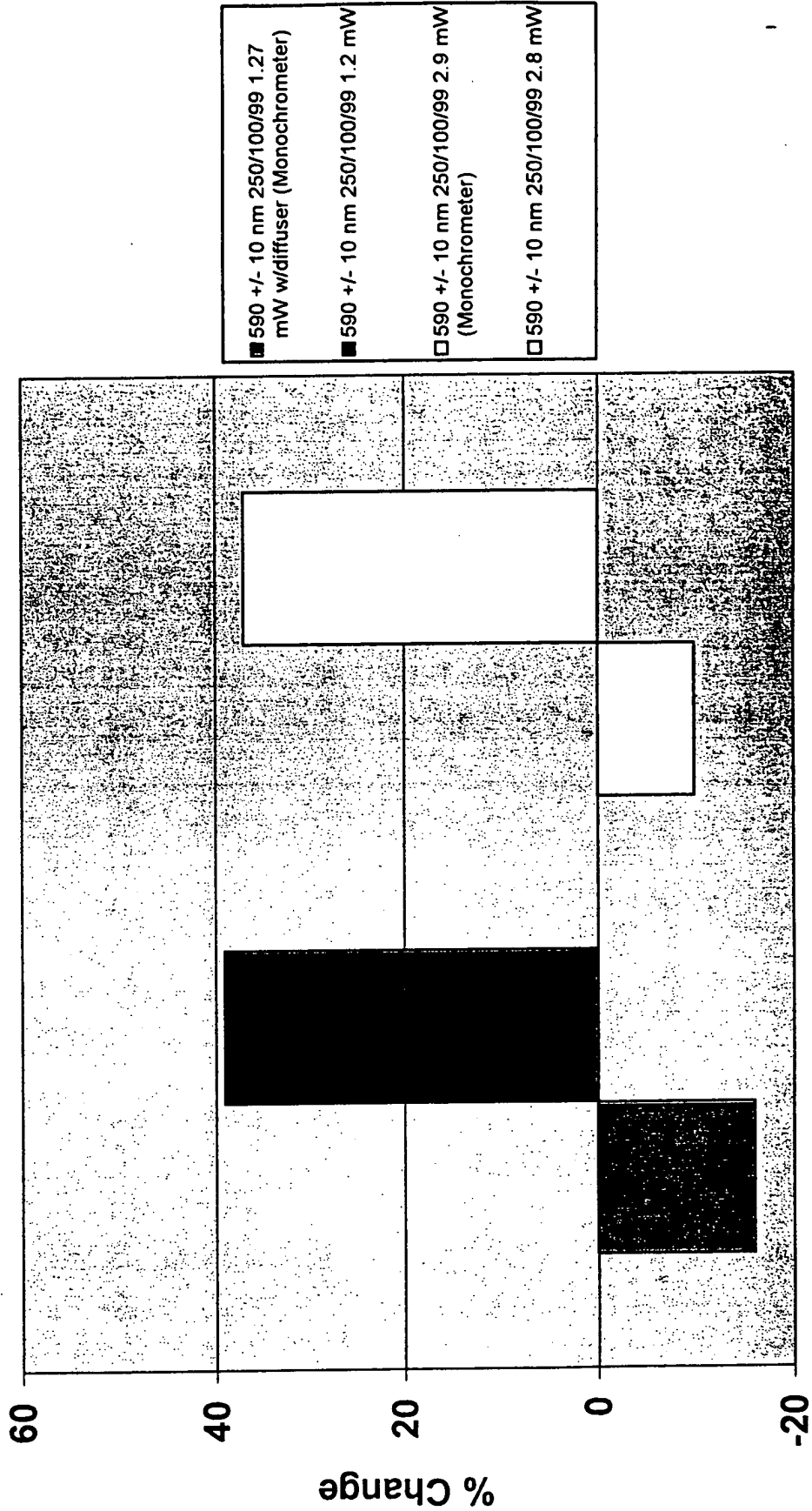
Percent Change in Procollagen I Production by a Human Fibroblast Line Using a 590 nm LED Array and Various Pulsed Parameters



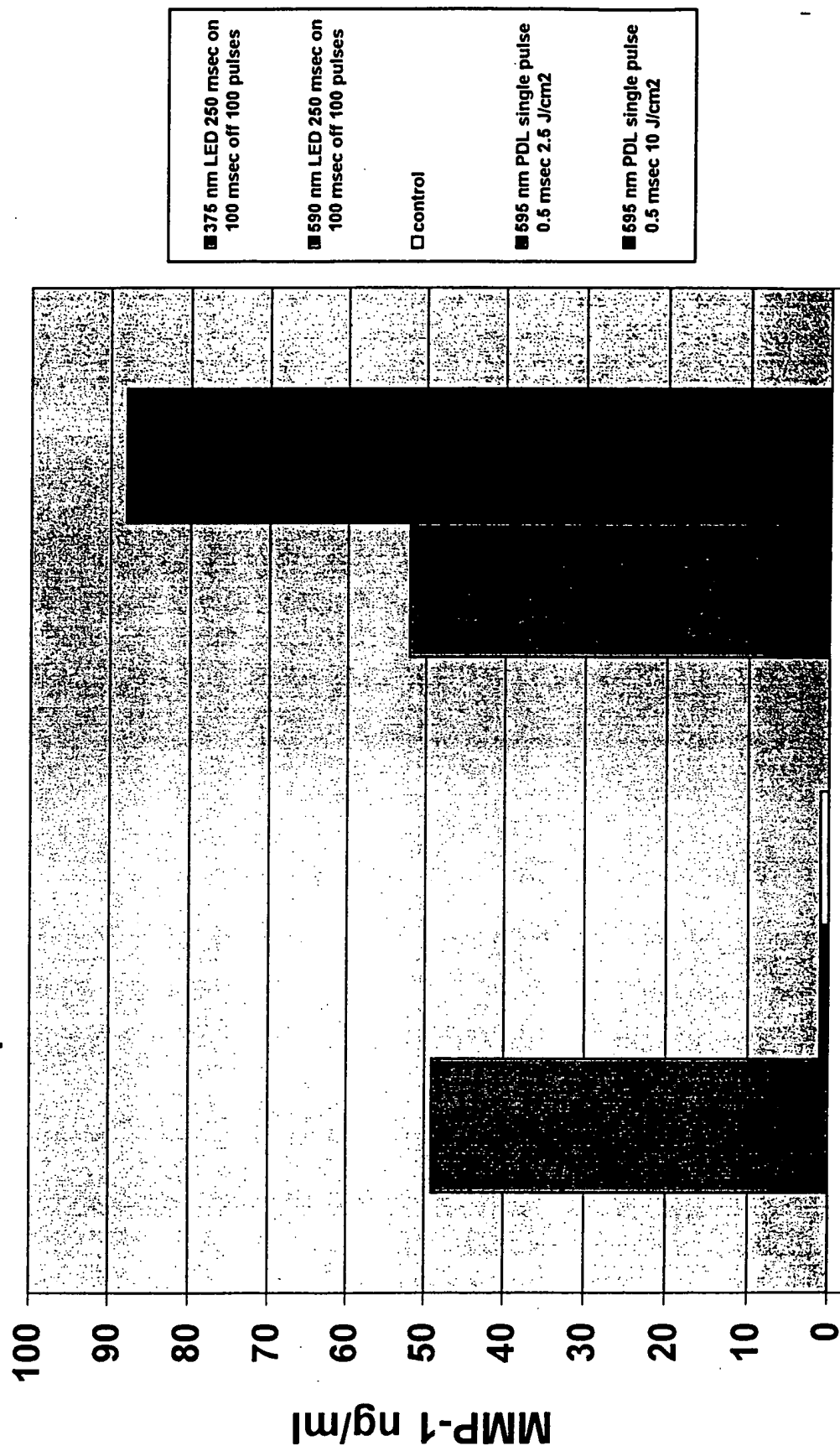
Percent Change in ATP Level in a Human Fibroblast Cell Line After Exposure to a 590 nm LED Array



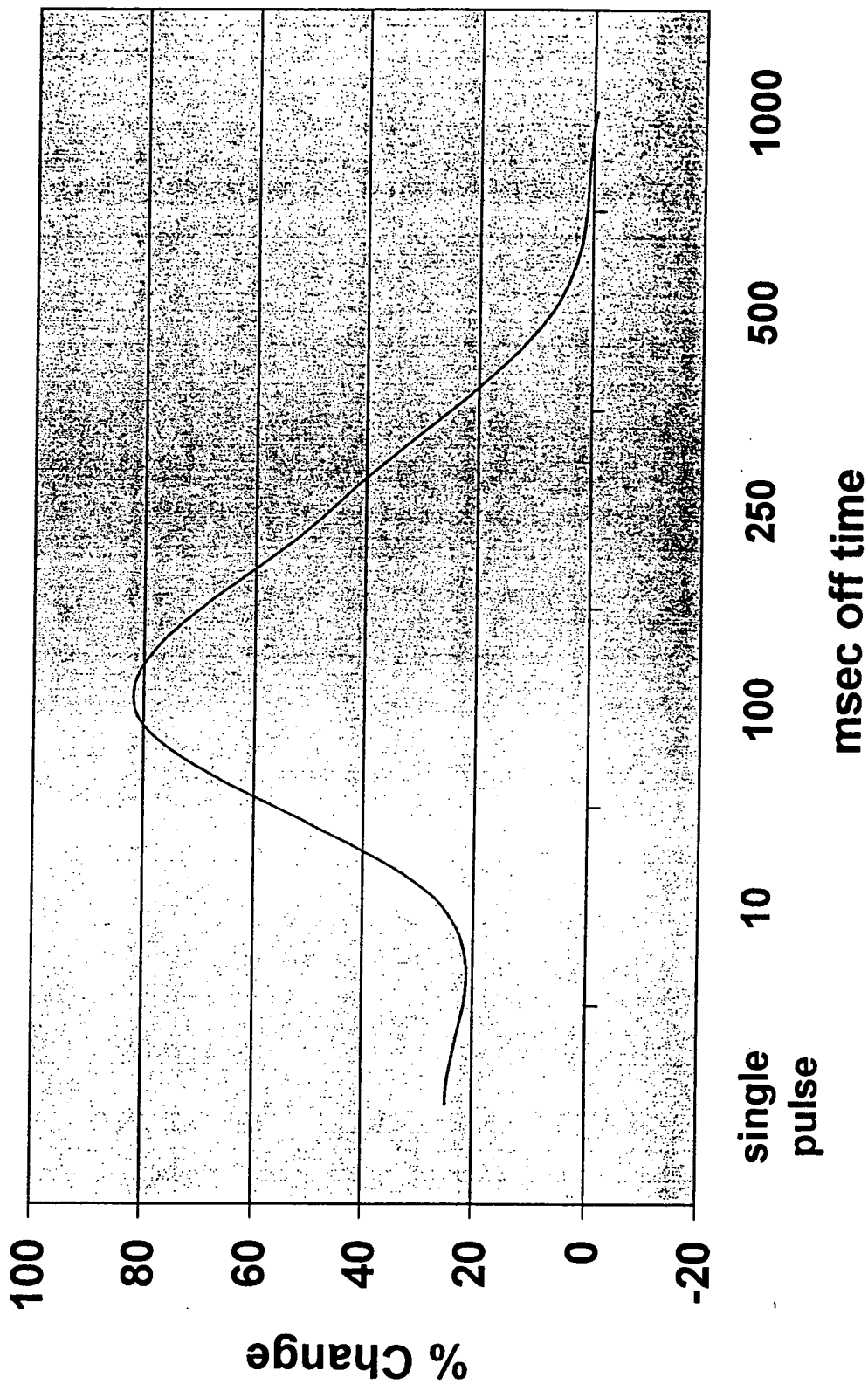
Percent Change in Procollagen I Production at 96 Hours by a Human Fibroblast Cell Line Exposed to Pulsed Monochromometer and Pulsed LED Array Parameters



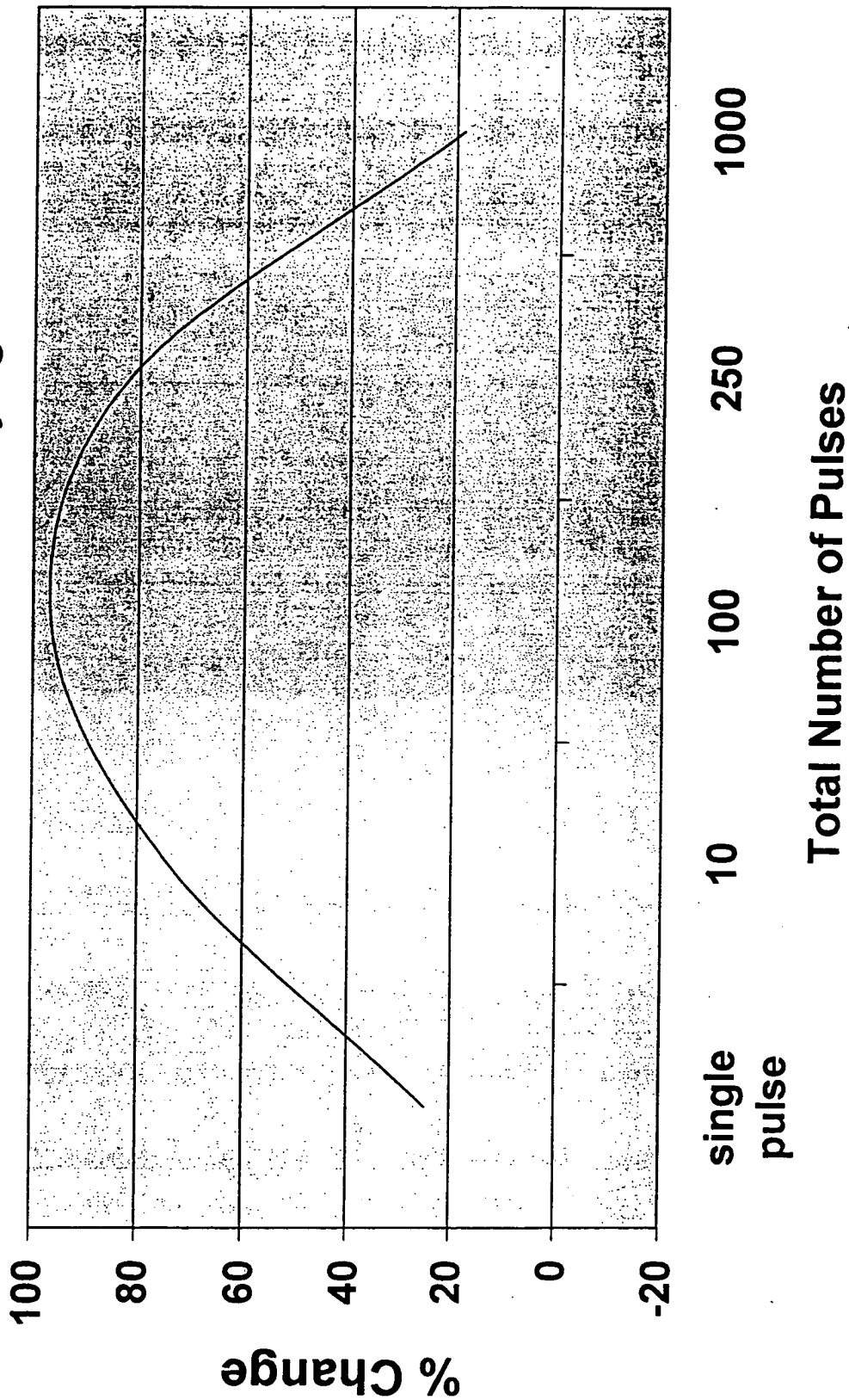
Production of MMP-1 by Human Fibroblasts at 72 Hours Post Exposure to LED and Laser Parameters



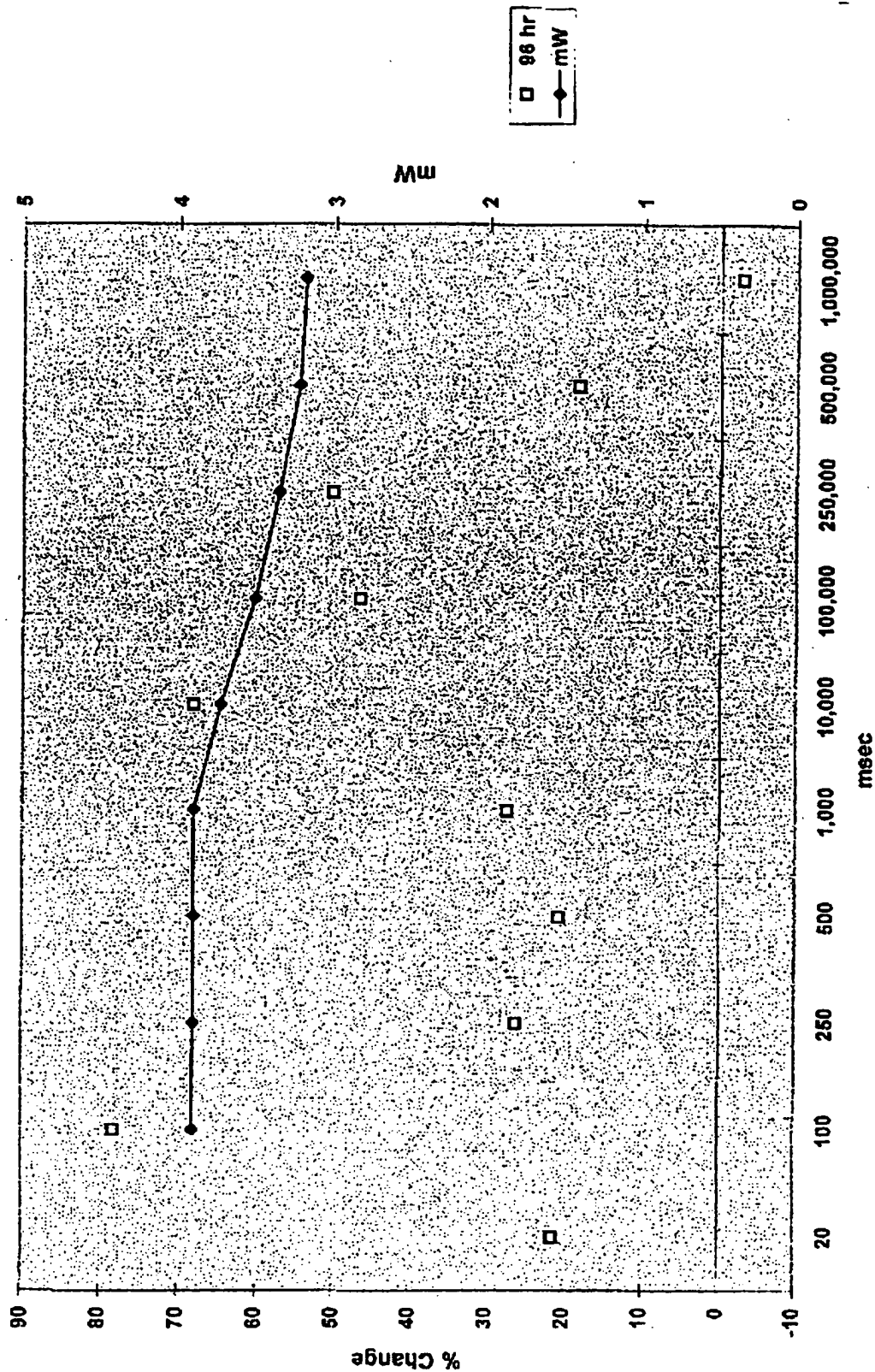
**Percent Change in Procollagen I Production at 96 Hours
by a Human Fibroblast Line Using a 590 nm LED Array
250 msec on 250 pulses and Varying Off Time**



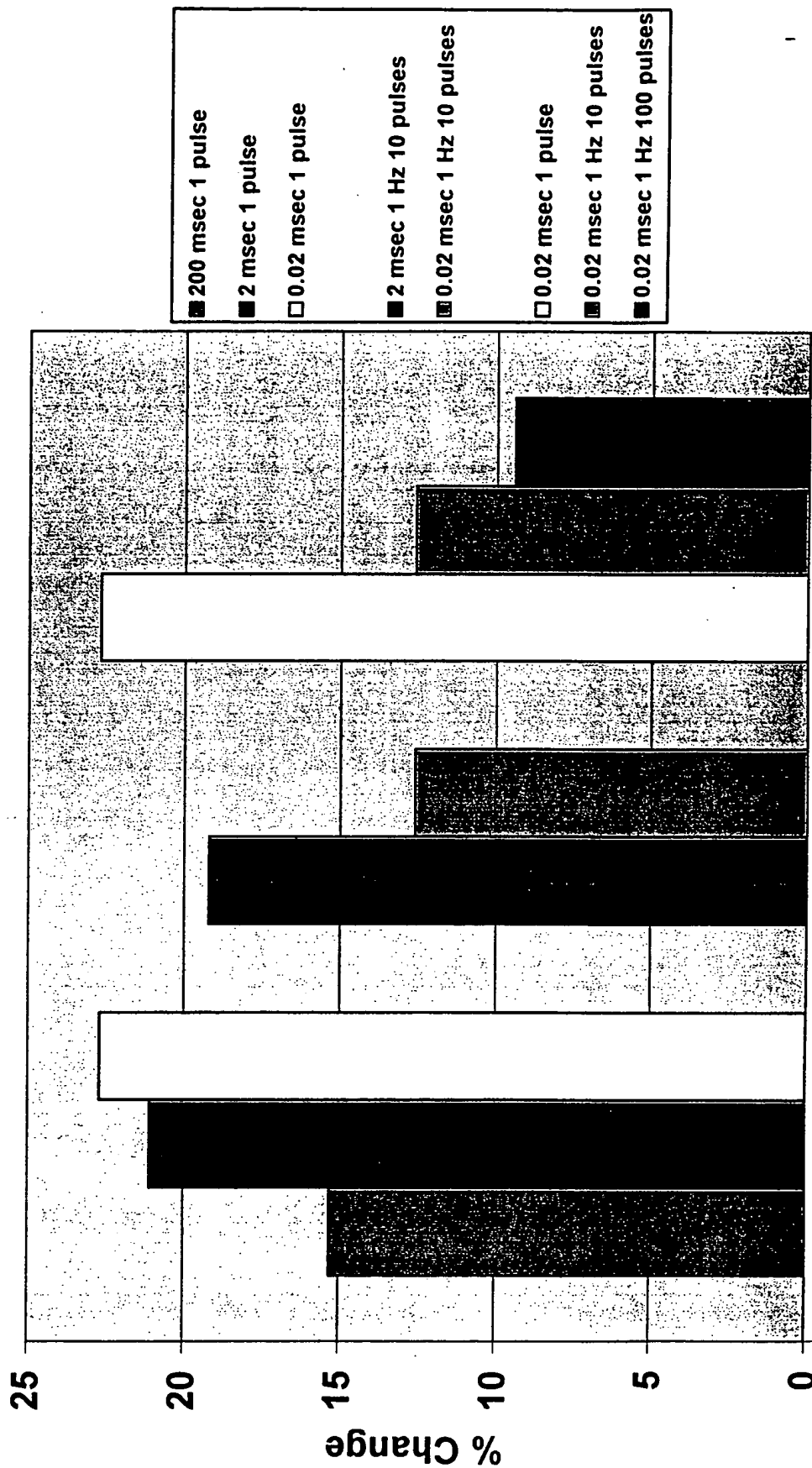
Percent Change in Procollagen I Production at 96 Hours by a Human Fibroblast Line Using a 590 nm LED Array 250 msec on 100 msec off and Varying Pulse Times



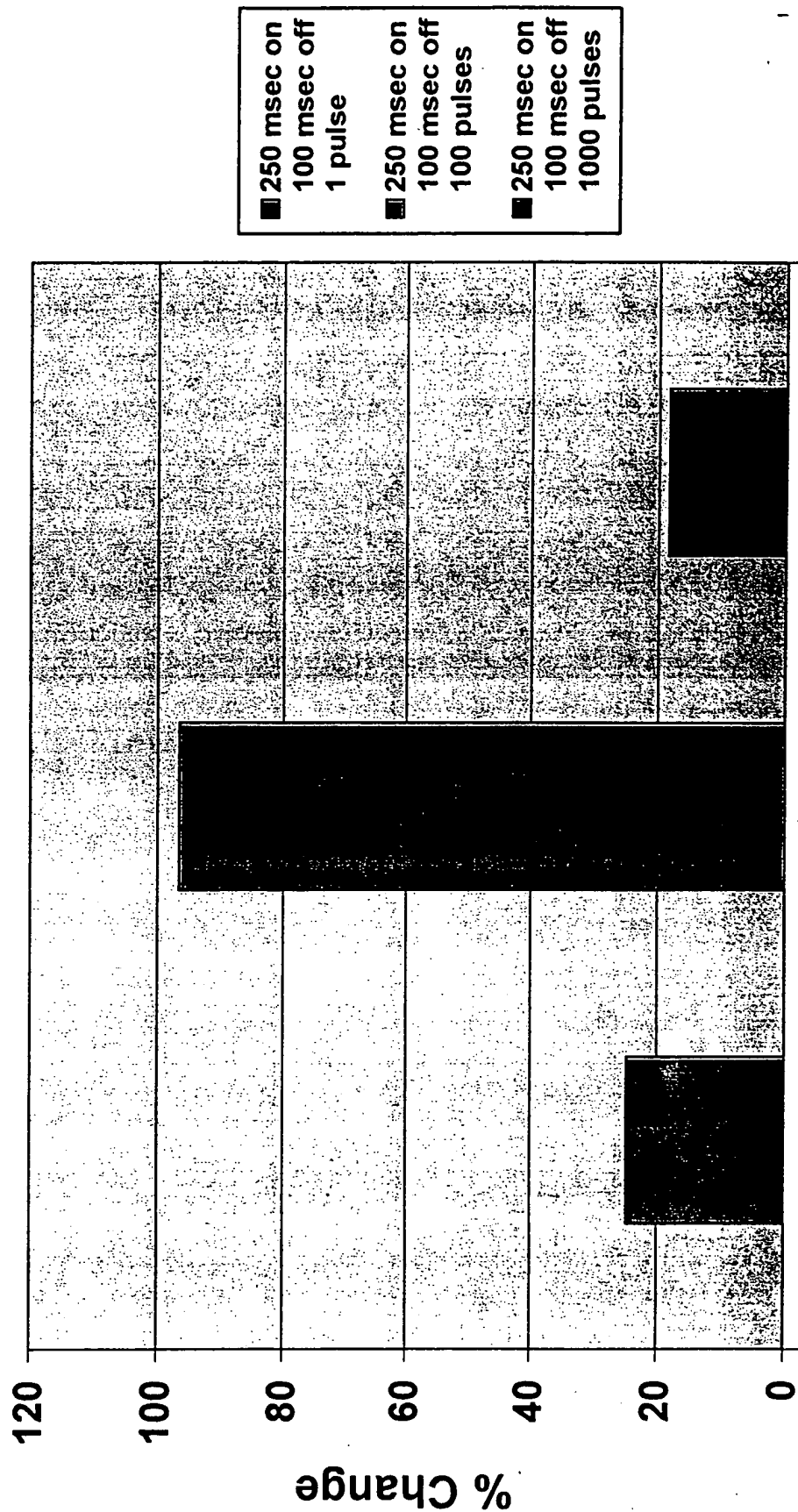
Percent Change in Procollagen I Production by Human Fibroblast Line
Over Time Using a 590 nm LED Array and Continuous Wave Mode



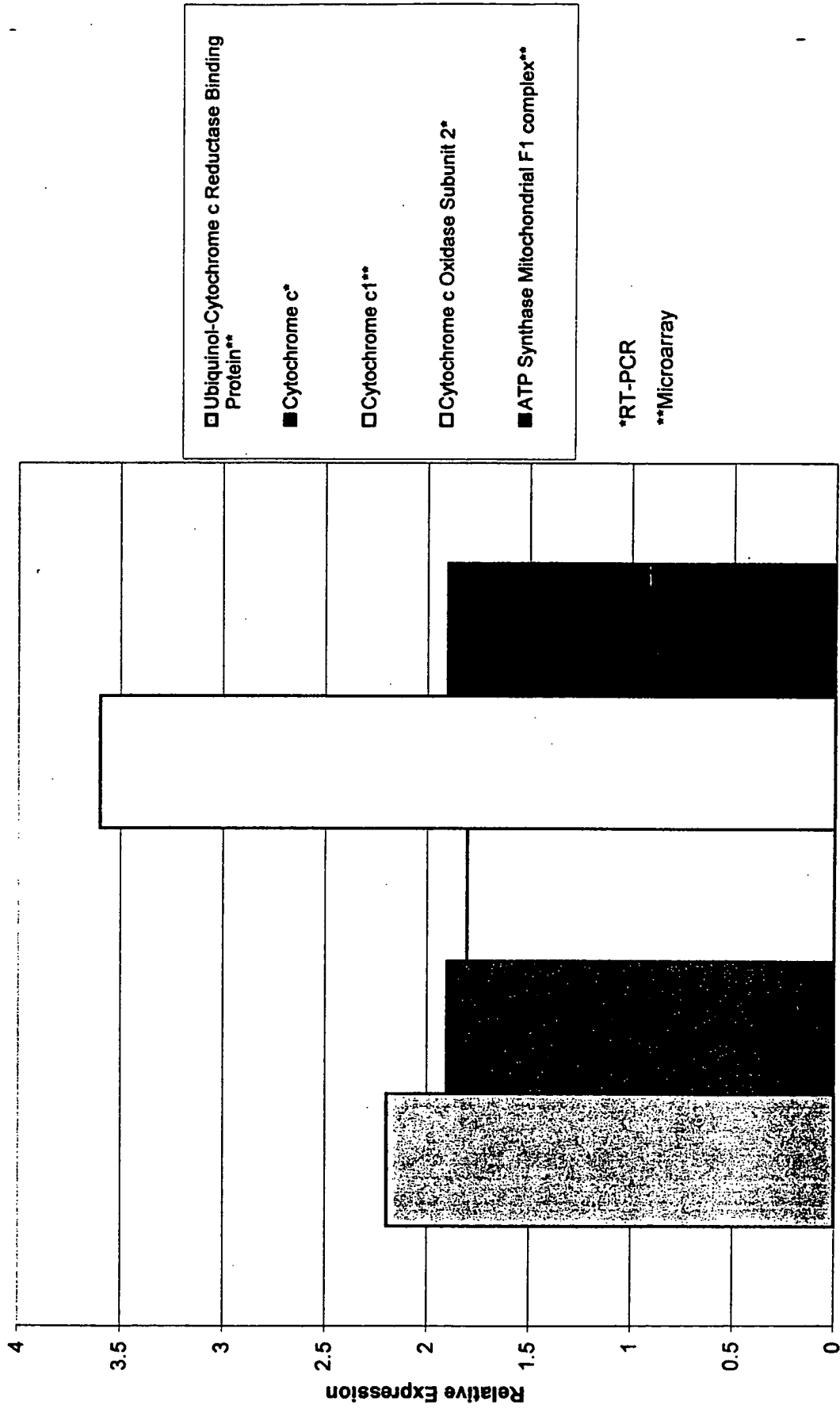
Percent Change in Procollagen Production at 96 Hours by a Human Fibroblast Cell Line Exposed to 655 nm LED Parameters



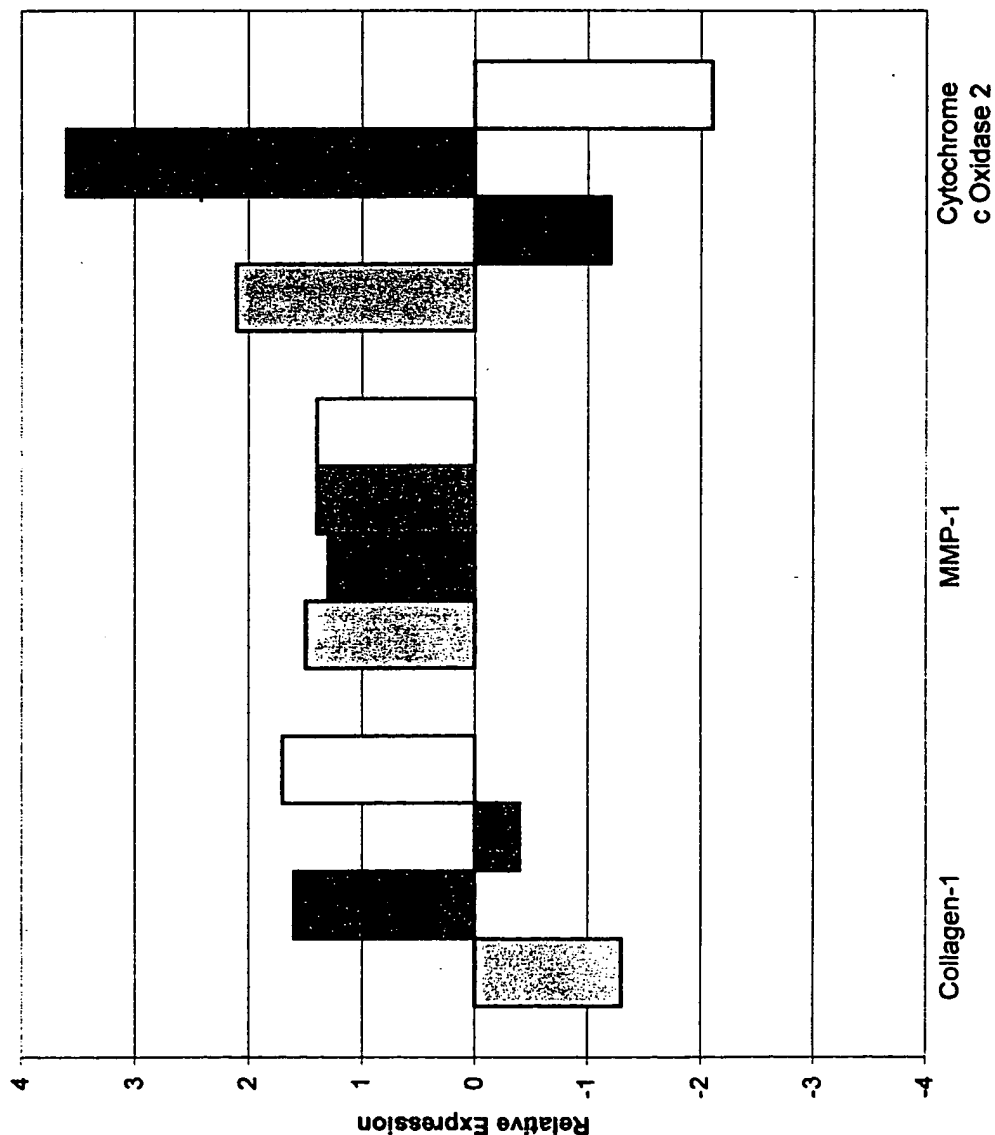
Percent Change in Procollagen I Production by a Human Fibroblast Cell Line at 96 Hours Post Exposure to a 590 nm LED Array



Mitochondrial Electron Transport System Gene Expression 24hrs Post Exposure to 590nm LEDs (FDA Protocol)

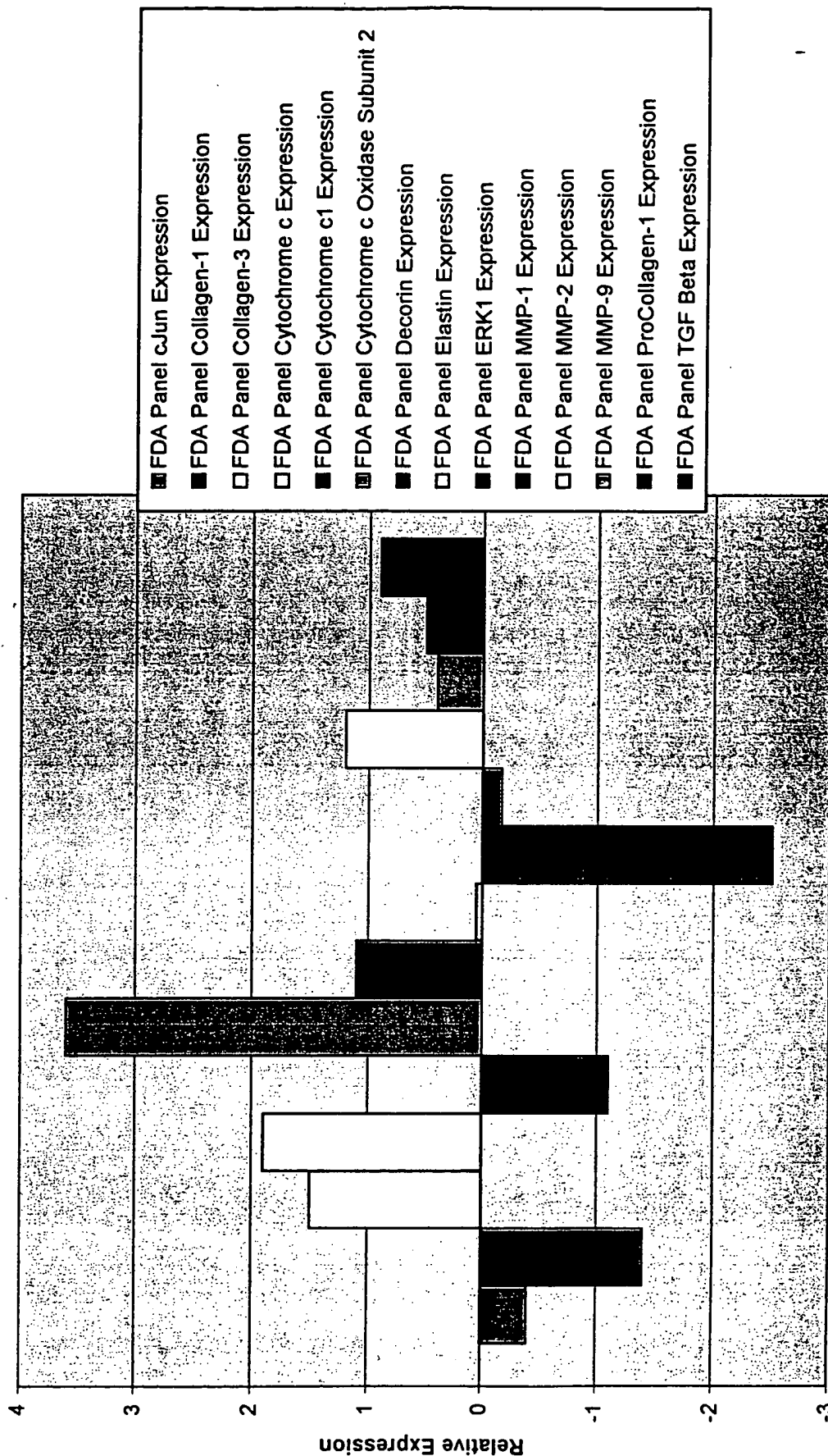


RT-PCR Expression of Collagen-1 and MMP-1 in Cultured Human Fibroblasts 24hrs Post Exposure to 590nm LED @ CW/25s, 250/100/1, 250/100/100, and 250/100/1000

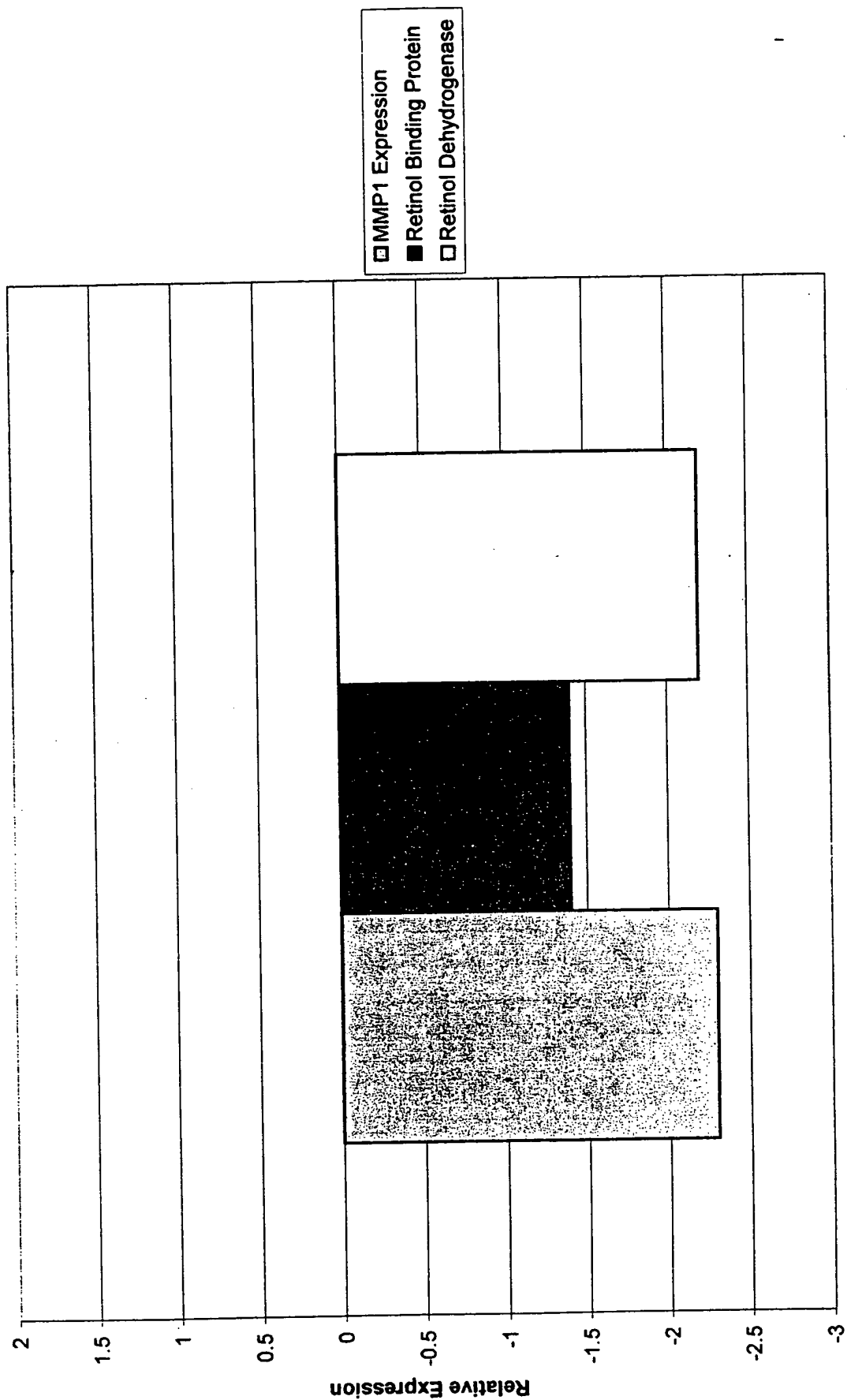


□ FDA+IR Filter CW Collagen-1 Expression
■ FDA+IR Filter 250/100/1 Collagen-1 Expression
▨ FDA+IR Filter 250/100/100 Collagen-1 Expression
□ FDA+IR Filter 250/100/1000
□ FDA+IR Filter CW MMP-1 Expression
■ FDA+IR Filter 250/100/1 MMP-1 Expression
■ FDA+IR Filter 250/100/100 MMP-1 Expression
□ FDA+IR Filter 250/100/1000 MMP-1 Expression
□ FDA+IR Filter CW Cytochrome Oxidase 2
■ FDA+IR Filter 250/100/1 Cytochrome C Oxidase 2 Expression
■ FDA+IR Filter 250/100/100 Cytochrome c Oxidase 2 Expression
□ FDA+IR Filter 250/100/1000 Cytochrome c Oxidase 2 Expression

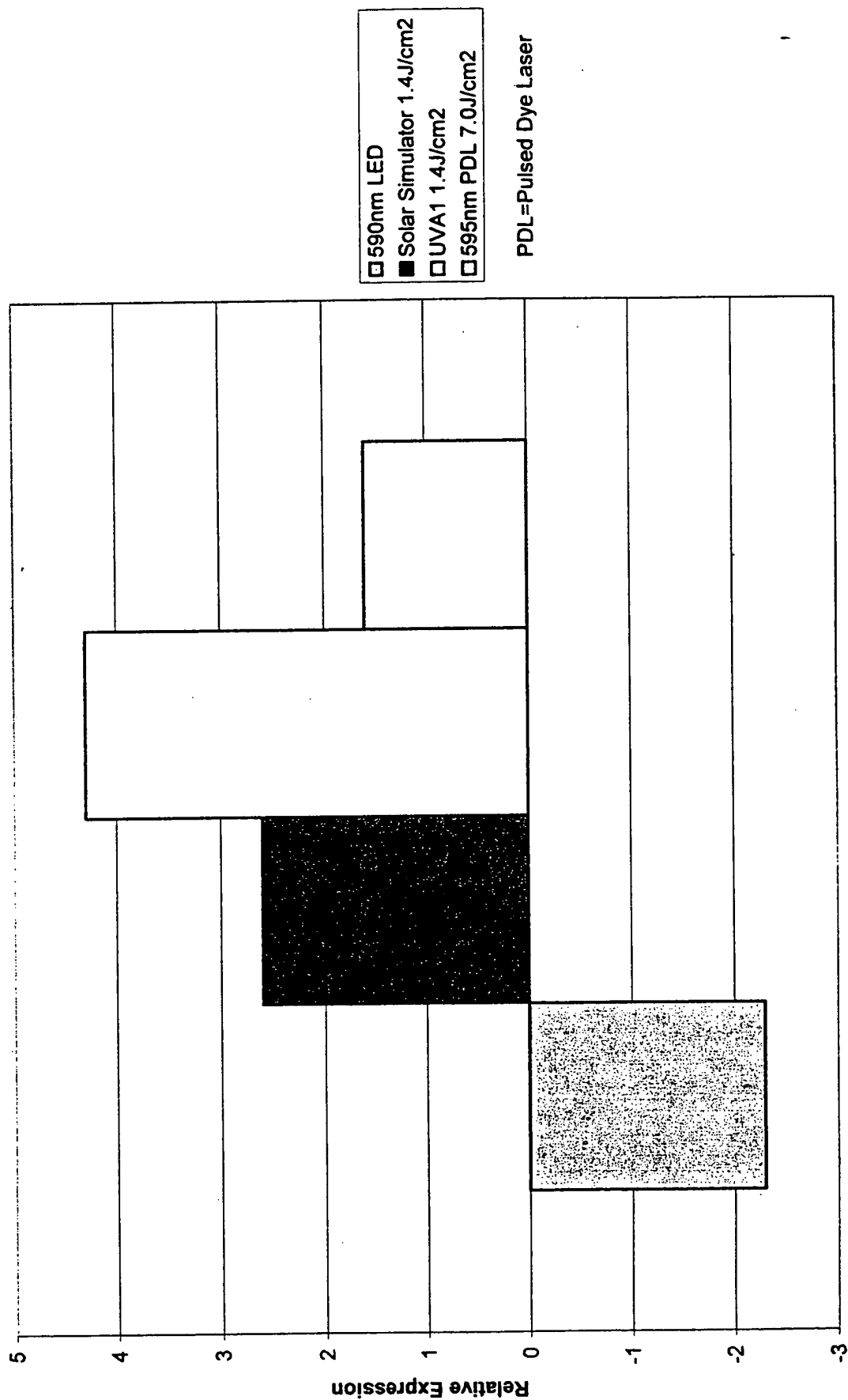
RT-PCR Expression Summary for 24hrs Post Exposure to 590nm LEDs (FDA Protocol)



Gene Expression 24hrs Post Exposure to 590nm LEDs (FDA Panel)



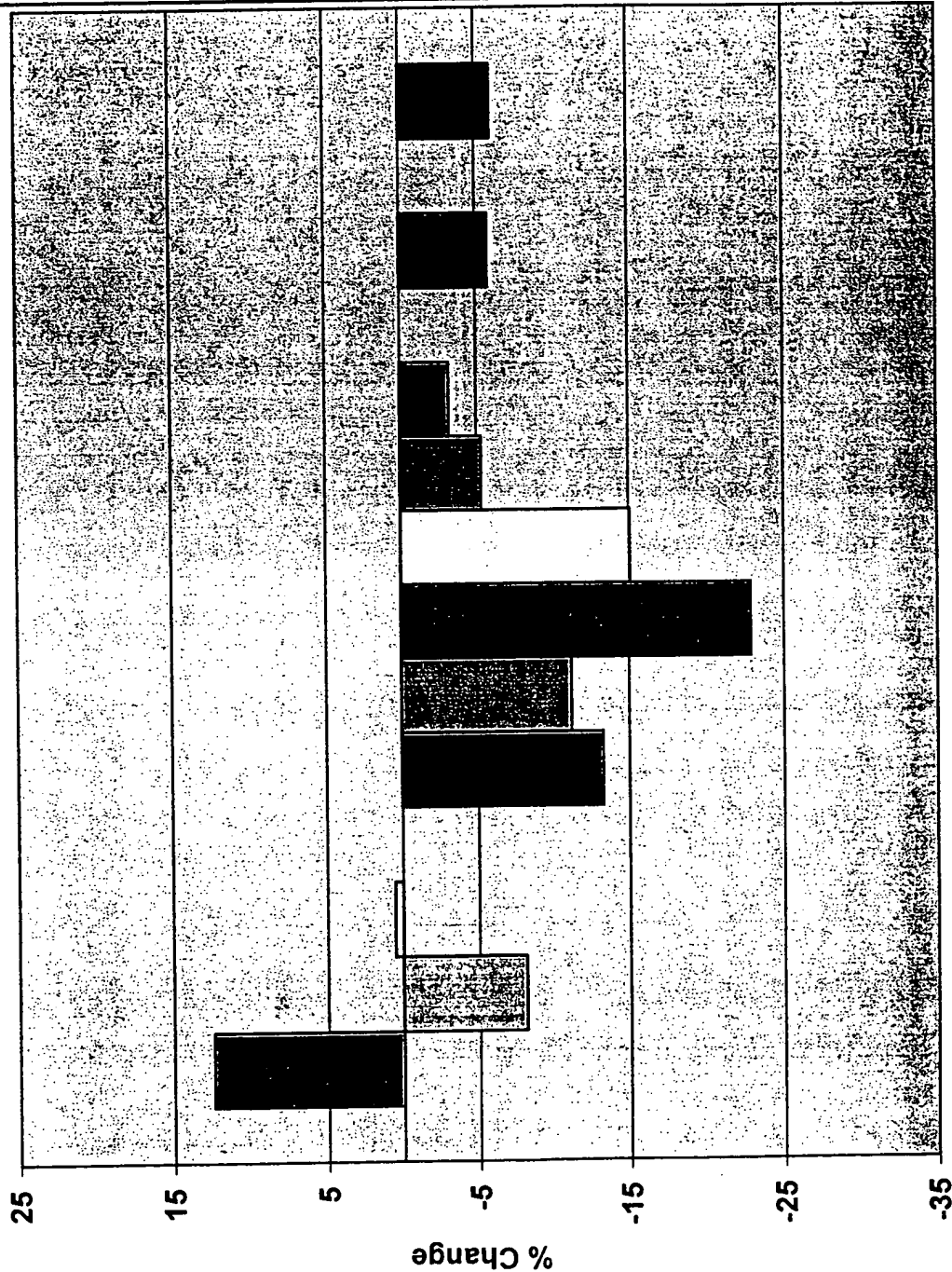
Relative MMP1 Expression 24hrs Post Exposure by RT-PCR



OBSERVED TRENDS IN IMMUNOFLORESCENT STAINING OF SKIN BIOPSIES

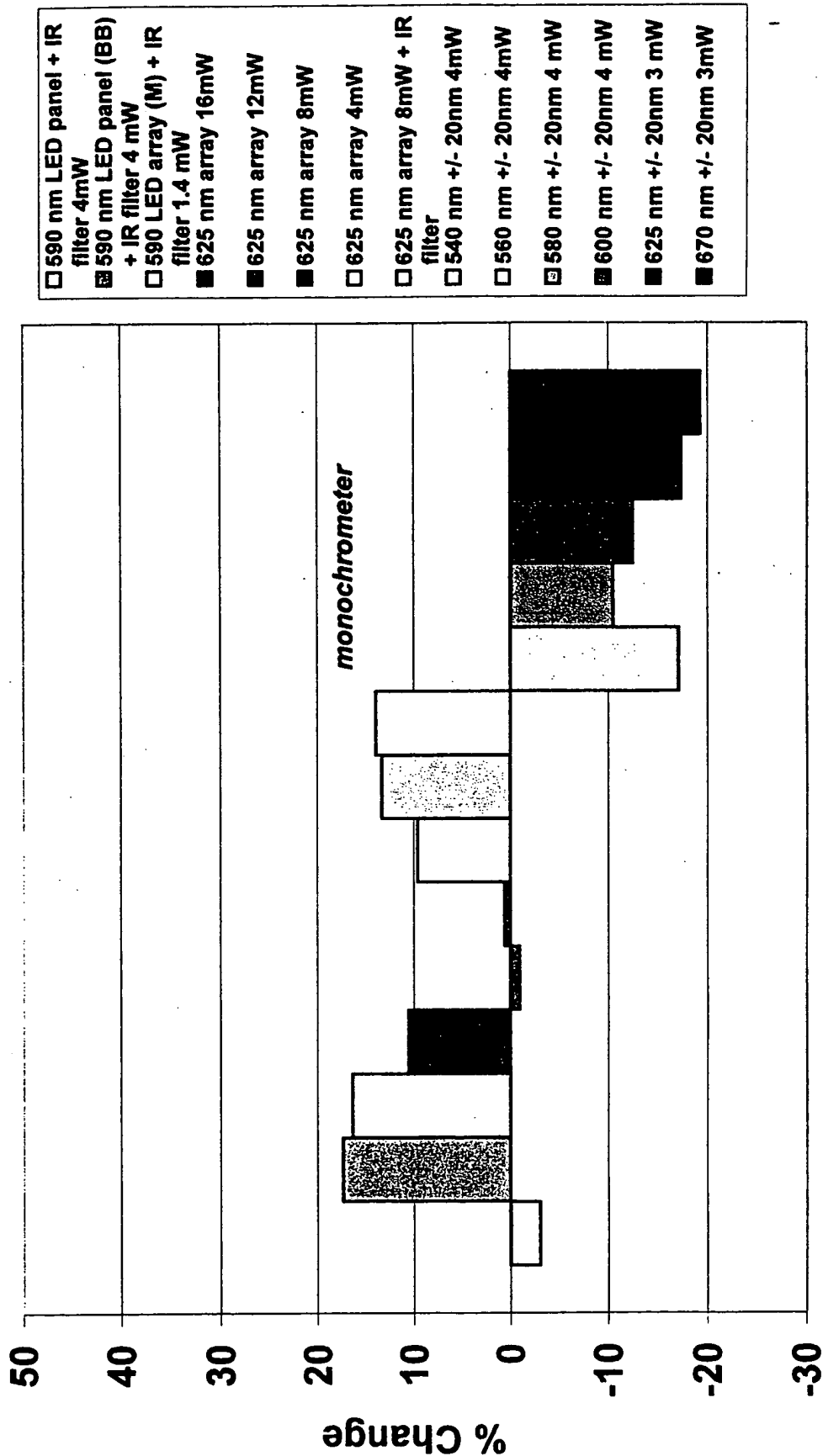
MARKERS	LED ALONE 590nm/FDA
Collagen 1	up
Collagen 3	<>
ProCollagen	<>
MMP1	down
MMP3	down
MMP9	down
bFGF	<>
c-Jun	down
c-Fos	down
EGFr	down
ERK 1	down

**Percent Change in VEGF Production at 45 Hrs
by Human Dermal Papillae Cells (70 yo)
Post Exposure to Various LED Parameters**

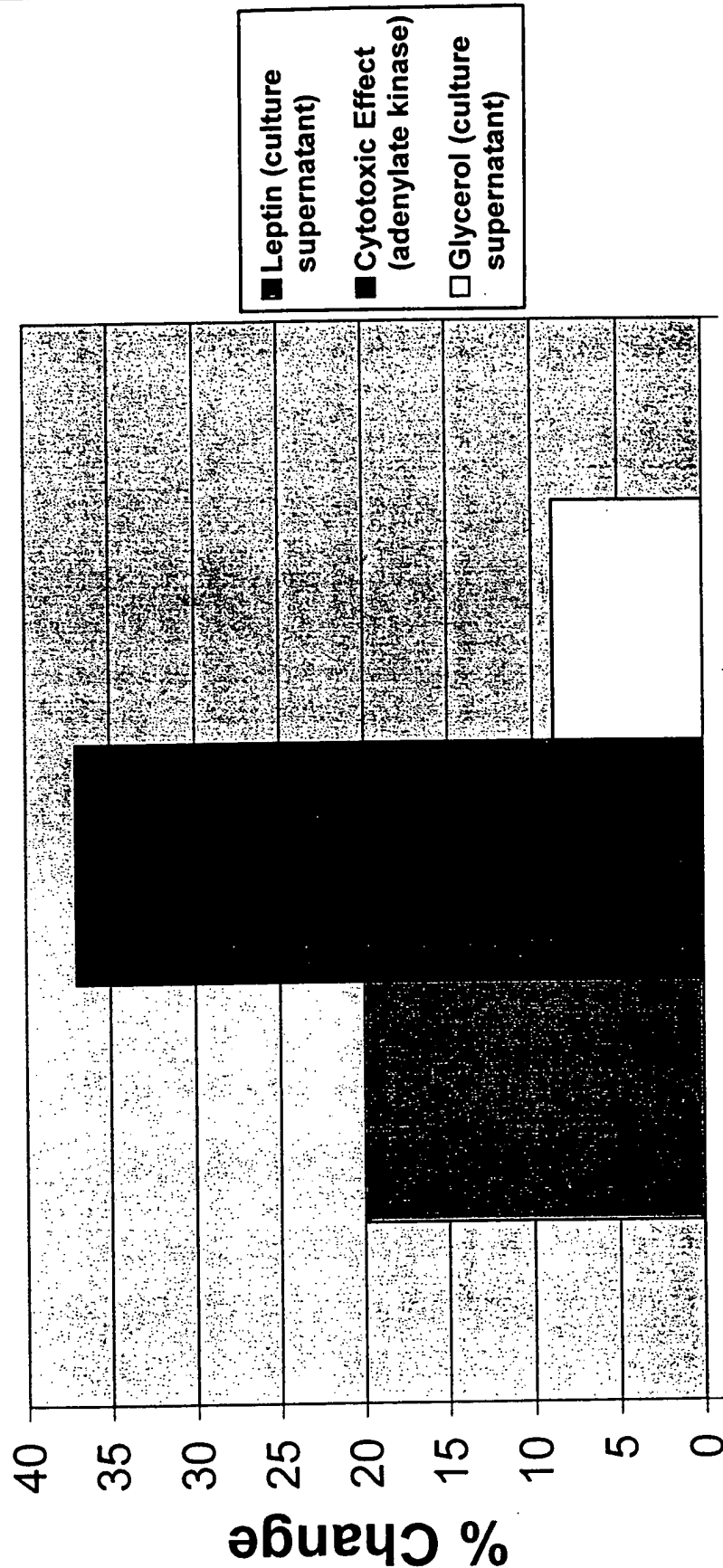


Percent Change in Procollagen I Production at 96 Hours by a Human Fibroblast Cell Line (42 yo) Exposed to Various Light Parameters

250/100/100



Effects of a 625 LED Array on Cultured Human Adipocytes 24 Hours Post Exposure



**625 nm JJ array with IR Filter
250/100/100 4 mW**

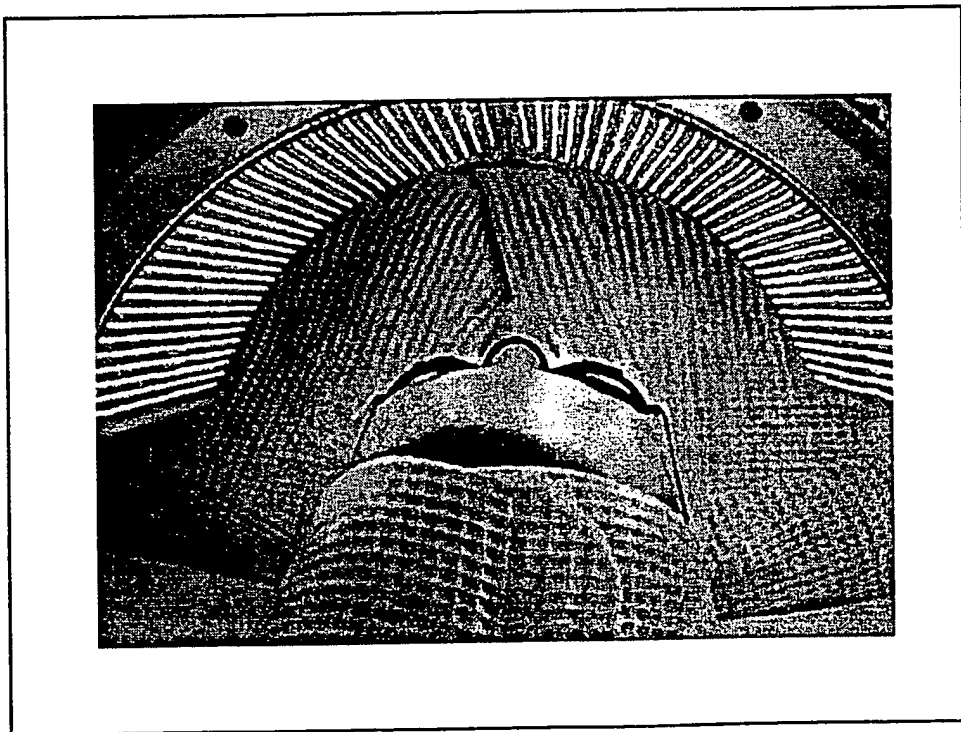
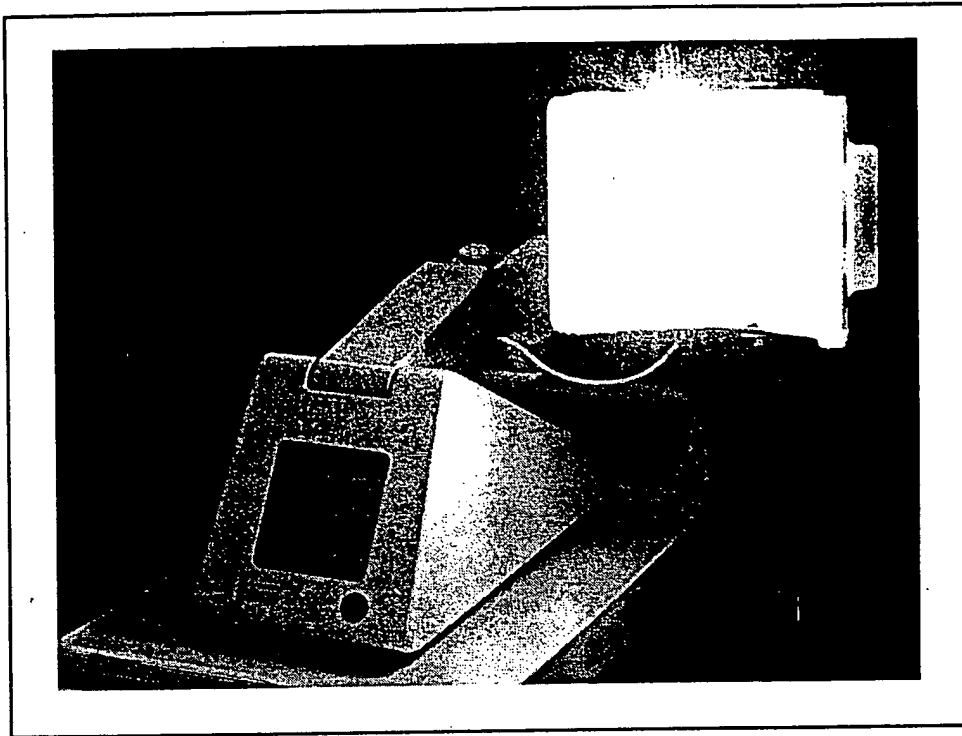


"Beauty & Science"

Transforming the Landscape of Skin Rejuvenation

Multi-center Clinical Trial

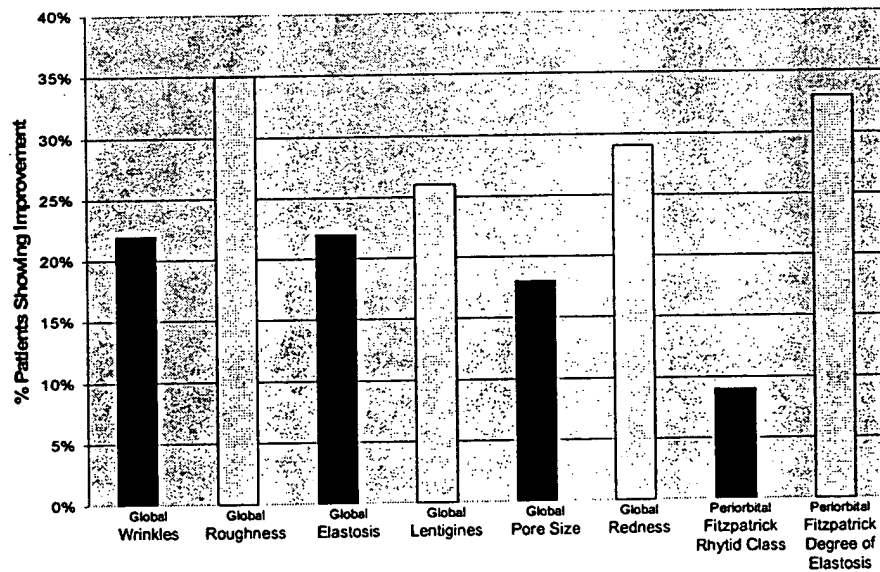
- 90 photoaged subjects were treated using a proprietary LED light device for reducing the appearance of:
 - Wrinkles
 - Pigmentation
 - Redness
 - Pore size
 - Roughness
- Study Design:
 - Multi-center clinical trial
 - 90 photoaged subjects
 - Skin biopsies were obtained at intervals of 1, 4, 8, 12 and 16 weeks post treatment and evaluated for ECM changes



Protocol Evaluation Criteria

- Wrinkles
- Roughness
- Elastosis
- Lentigines
- Pore Size
- Redness
- Fitzpatrick Rhytid Class
- Fitzpatrick Degree of Elastosis

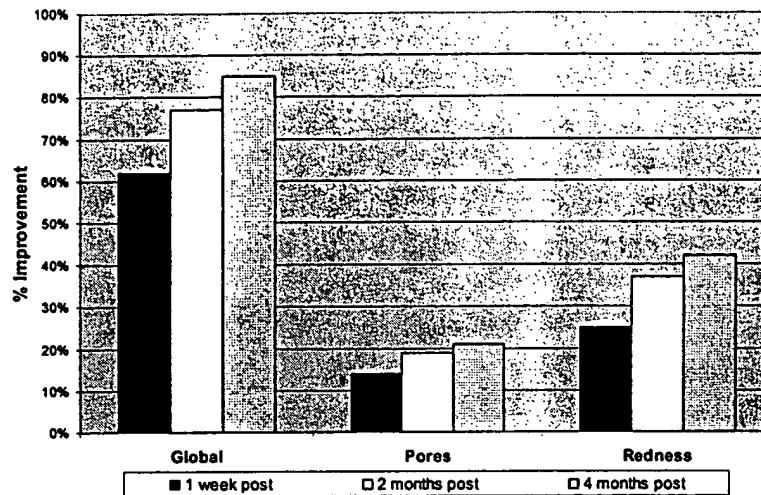
% Subjects Showing Improvement - Independent Grader
(4 months post treatment)



Preliminary Trial Results

% change improvement from 1 week · 2 months and from 2 months · 4 months

Periorbital



LED Photomodulation (LED device alone)

PRE

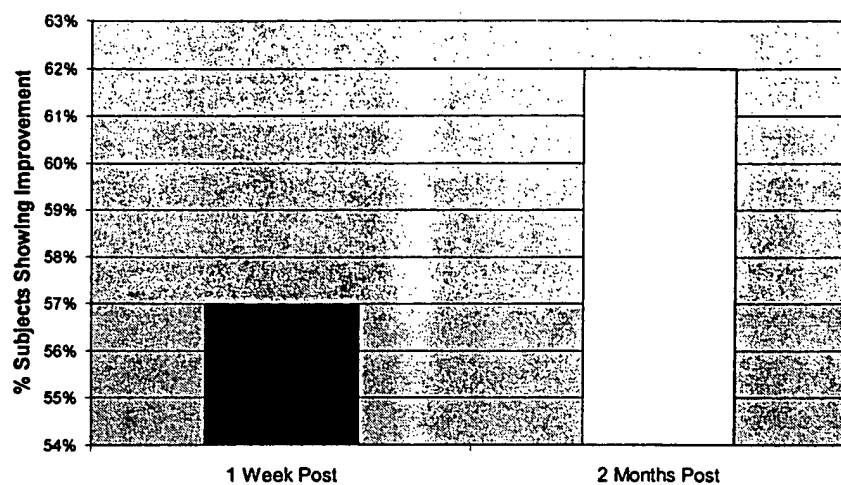
POST



One week after final treatment

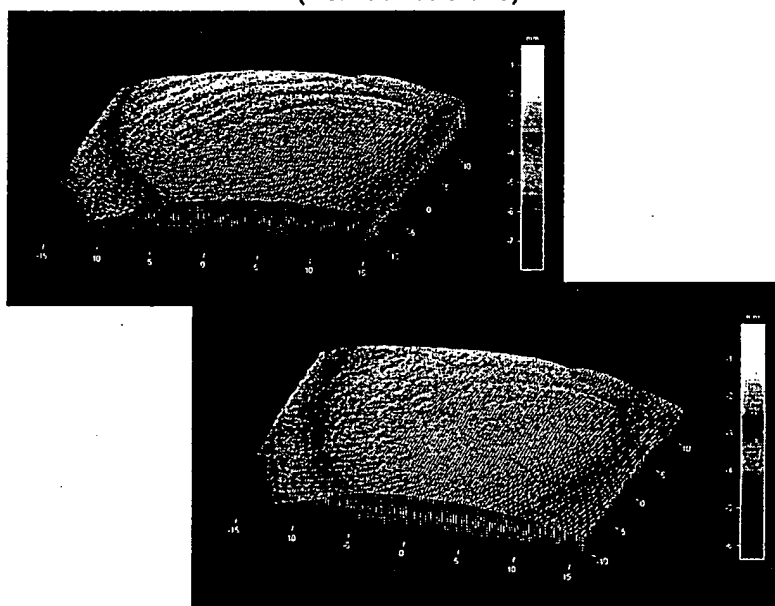
% Subjects Showing Improvement - Primos

Primos Average Roughness Analysis (Digital Profilometry)



Primos Digital Surface Profilometry

(LED device alone)



Summary of change in Fitzpatrick Degree of Elastosis (Class 1-9)

Fitzpatrick Degree of Elastosis		Improved 1 Class		Improved 2 Classes		Improved 3 Classes		Total % Improved by 1, 2 or 3 categories
		#	%	#	%	#	%	
Fitzpatrick Class I	1	•	•	•	•	•	•	0
	2	0	0%	0	0%	0	0%	0
	3	6	13%	0	0%	0	0%	13%
Fitzpatrick Class II	4	10	16%	3	5%	0	0%	21%
	5	24	48%	2	4%	1	2%	54%
	6	10	38%	6	23%	0	0%	62%
Fitzpatrick Class III	7	0	0%	0	0%	0	0%	0%
	8	6	46%	3	23%	1	8%	77%
	9	0	0%	0	0%	0	0%	0%

Summary of change in Fitzpatrick Degree of Elastosis (Class 1-9)

Fitzpatrick Degree of Elastosis		Improved 1 Class		Improved 2 Classes		Improved 3 Classes		Total % Improved by 1, 2 or 3 categories
		#	%	#	%	#	%	
Fitzpatrick Class I	1	•	•	•	•	•	•	0
	2	0	0%	0	0%	0	0%	0
	3	6	13%	0	0%	0	0%	13%
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	2	0	0%	0	0%	0	0%	0
	3	6	13%	0	0%	0	0%	13%
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Fitzpatrick Degree of Elastosis		Improved 1 Class		Improved 2 Classes		Improved 3 Classes		Total % Improved by 1, 2 or 3 categories
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Fitzpatrick Class I	1	•	•	•	•	•	•	0
	2	0	0%	0	0%	0	0%	0
	3	6	13%	0	0%	0	0%	13%
Fitzpatrick Class II	4	10	16%	3	5%	0	0%	21%
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	8	6	46%	3	23%	1	8%	77%
	9	0	0%	0	0%	0	0%	0%

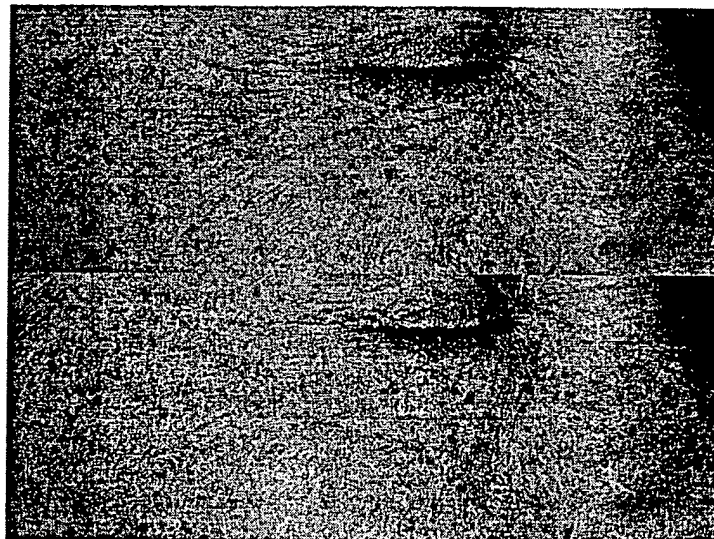
Summary of change in Fitzpatrick Degree of Elastosis (Class 1-9)

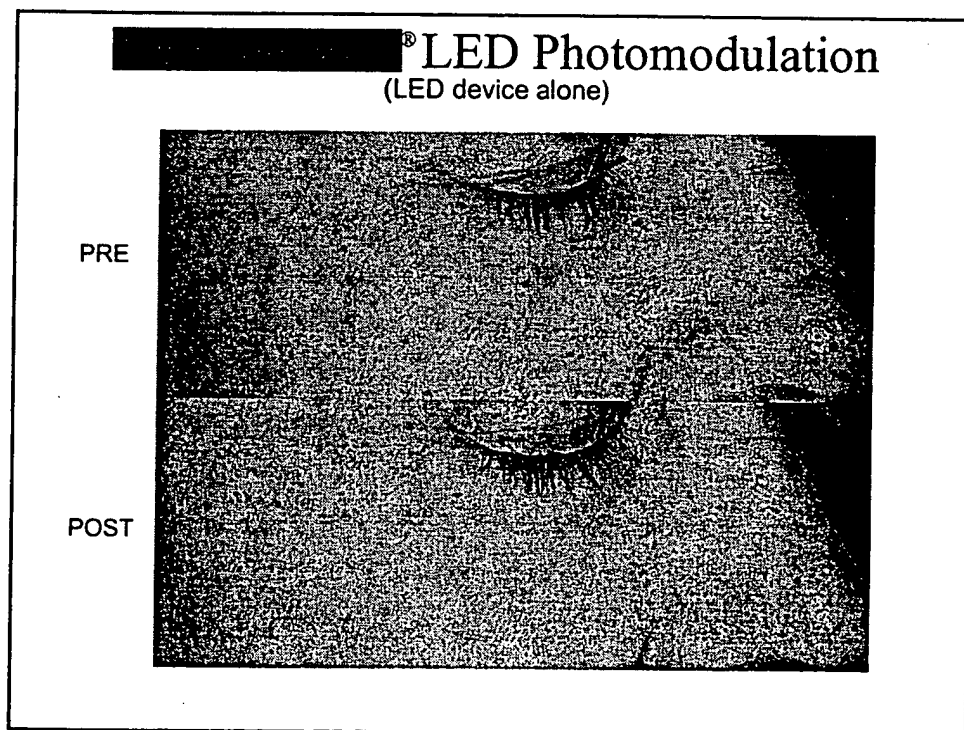
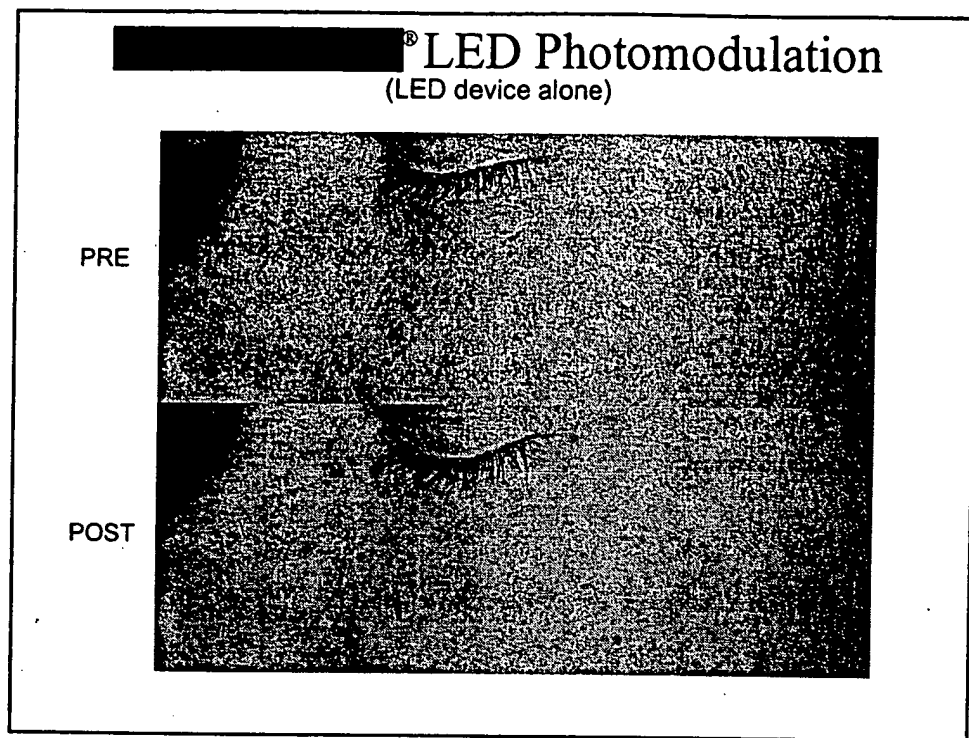
Fitzpatrick Degree of Elastosis		Improved 1 Class		Improved 2 Classes		Improved 3 Classes		Total % Improved by 1, 2 or 3 categories
		#	%	#	%	#	%	
Fitzpatrick Class I	1	*	*	*	*	*	*	0
	2	0	0%	0	0%	0	0%	0
	3	6	13%	0	0%	0	0%	13%
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	8	6	46%	3	23%	1	8%	77%
	9	0	0%	0	0%	0	0%	0%

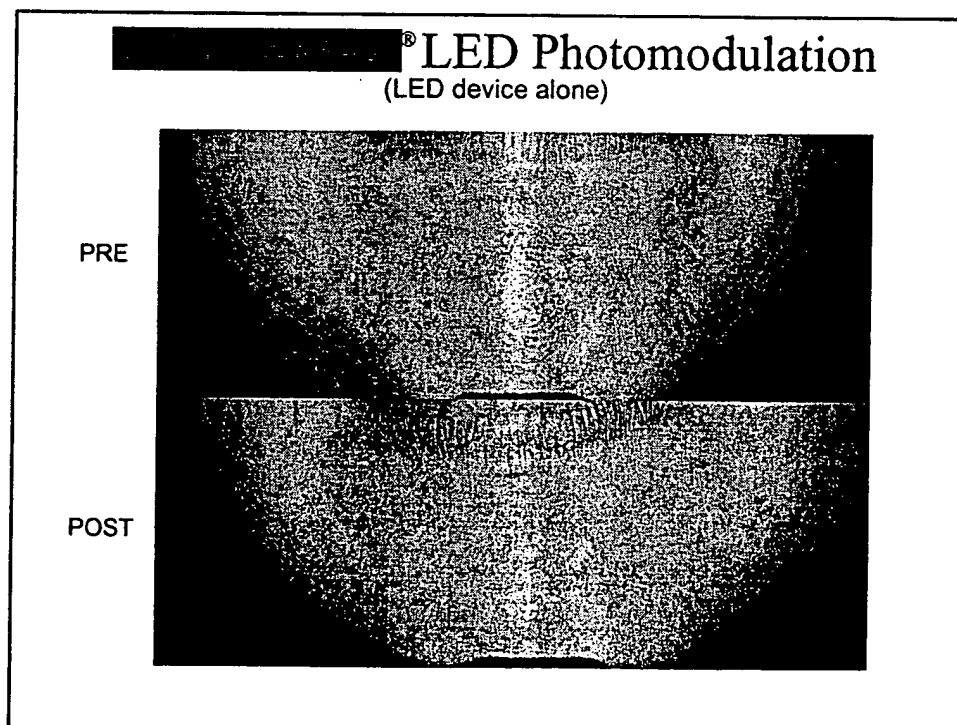
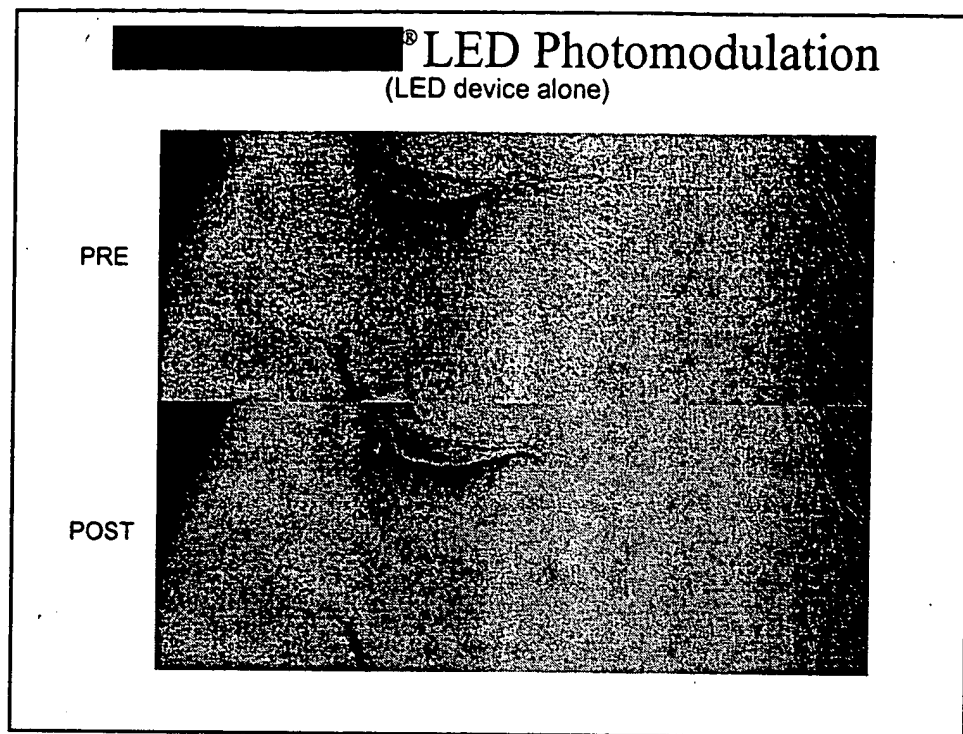
LED Photomodulation (LED device alone)

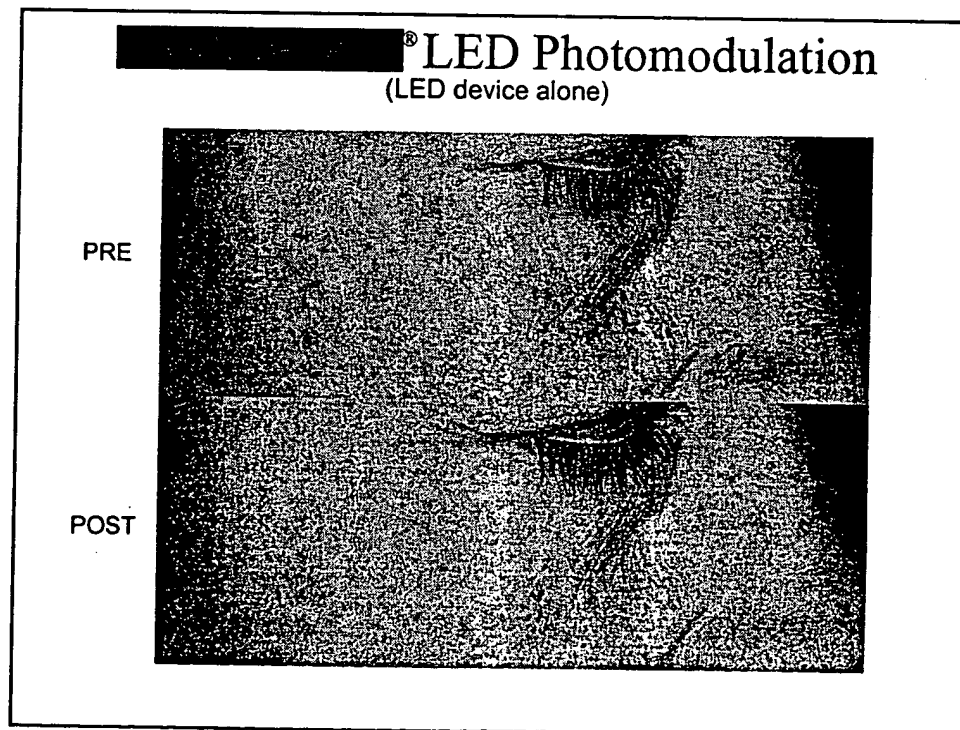
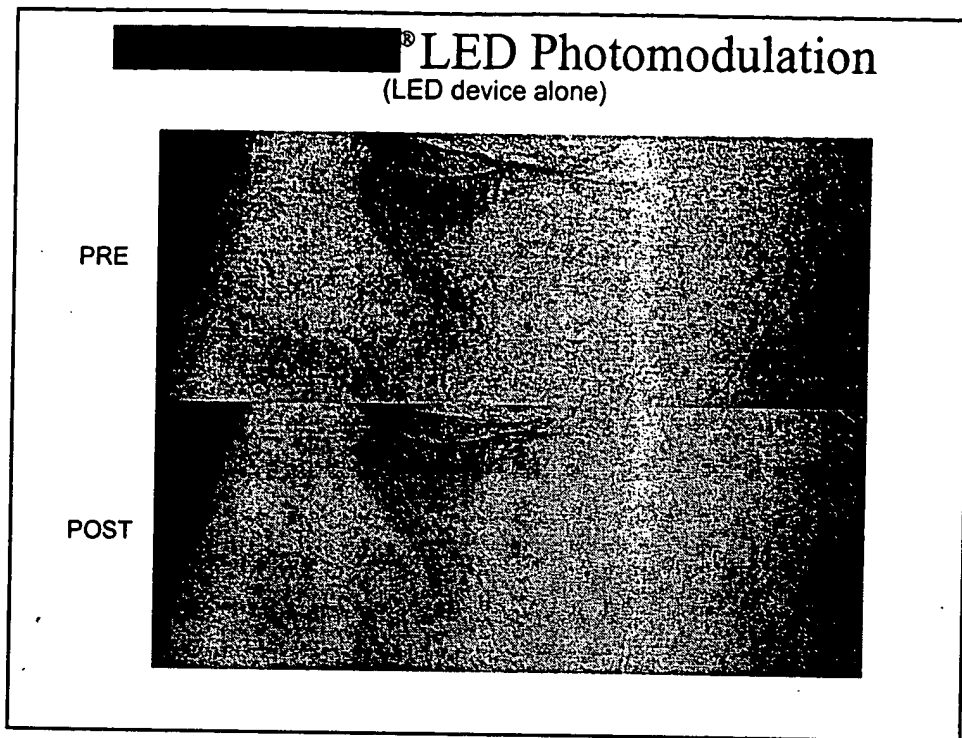
PRE

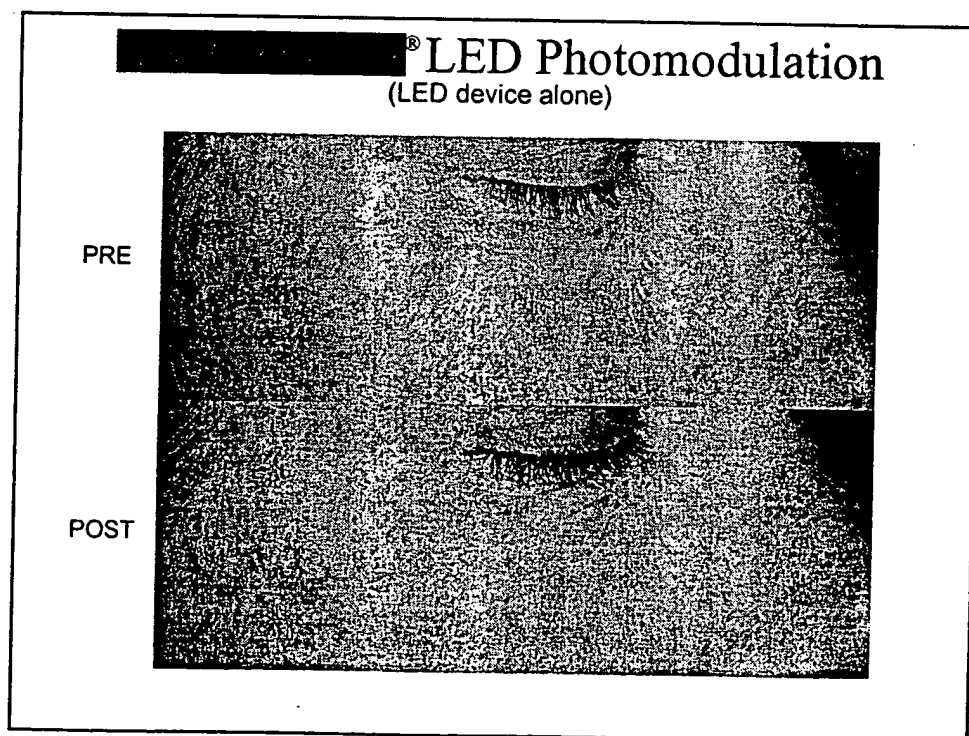
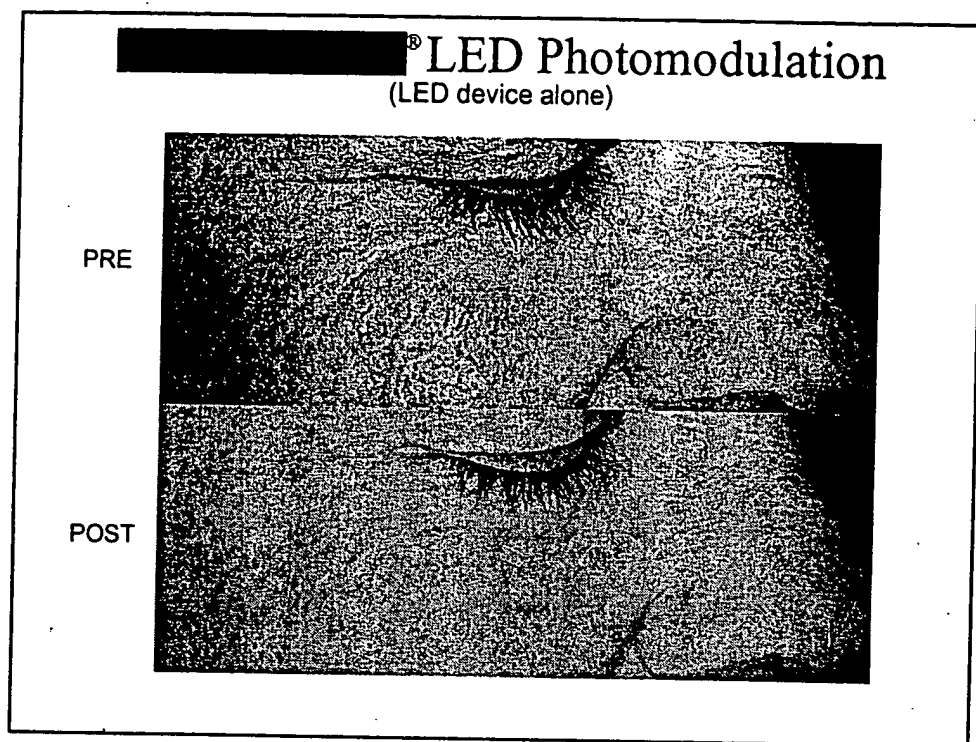
POST

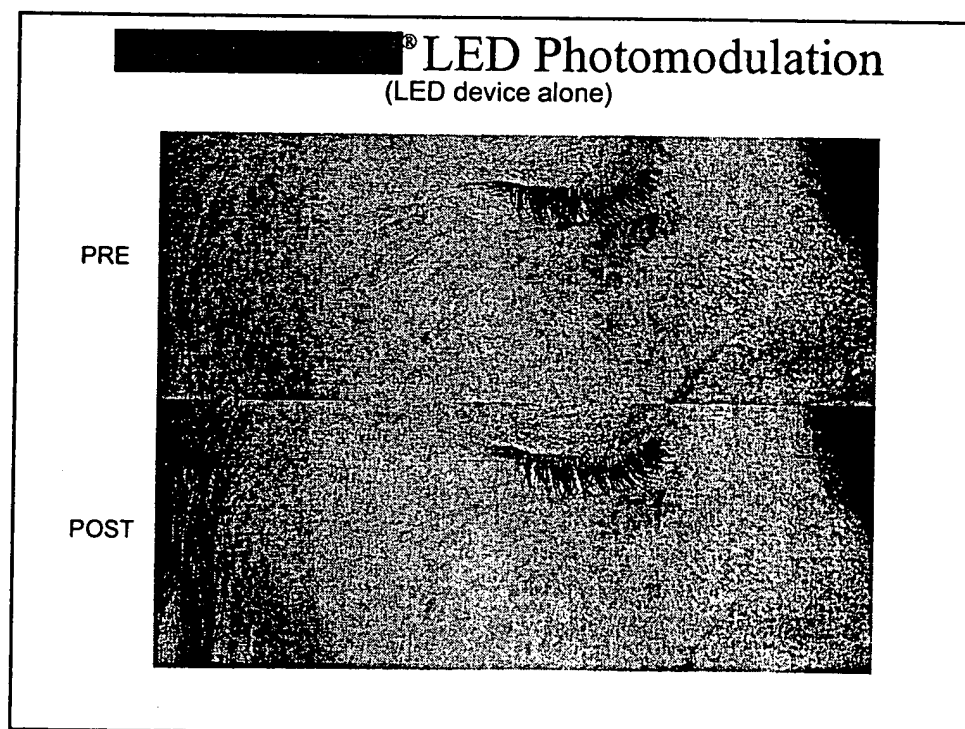
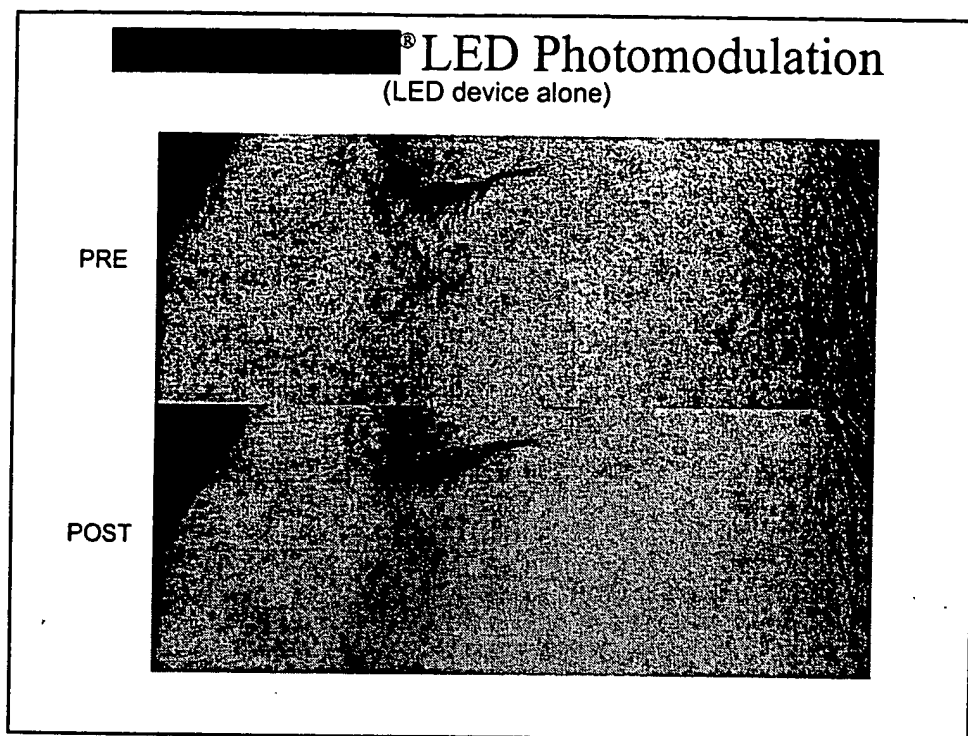


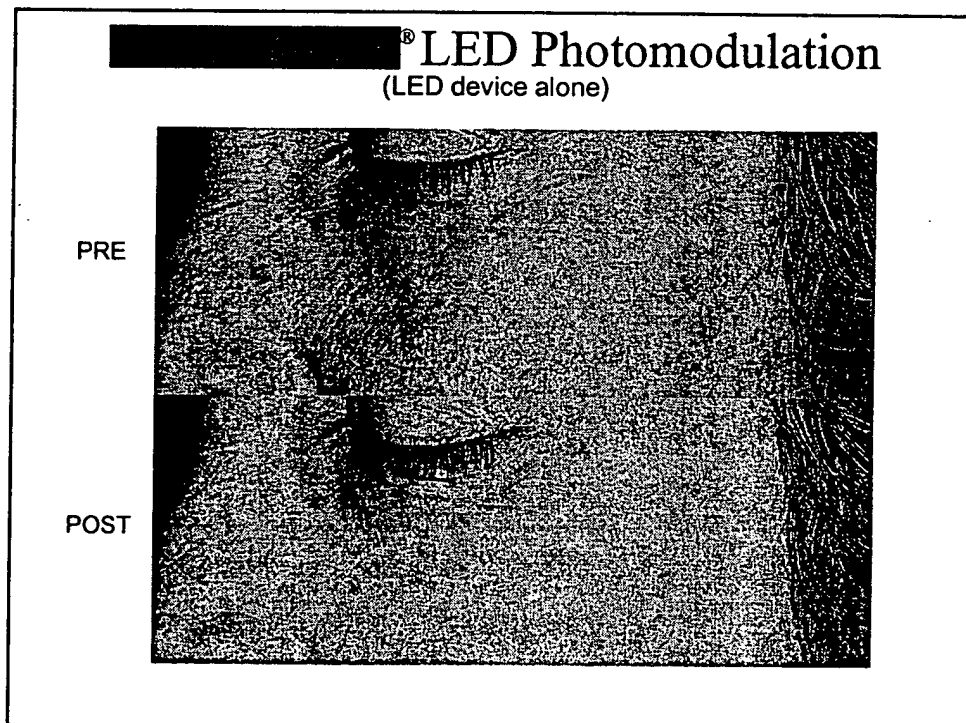
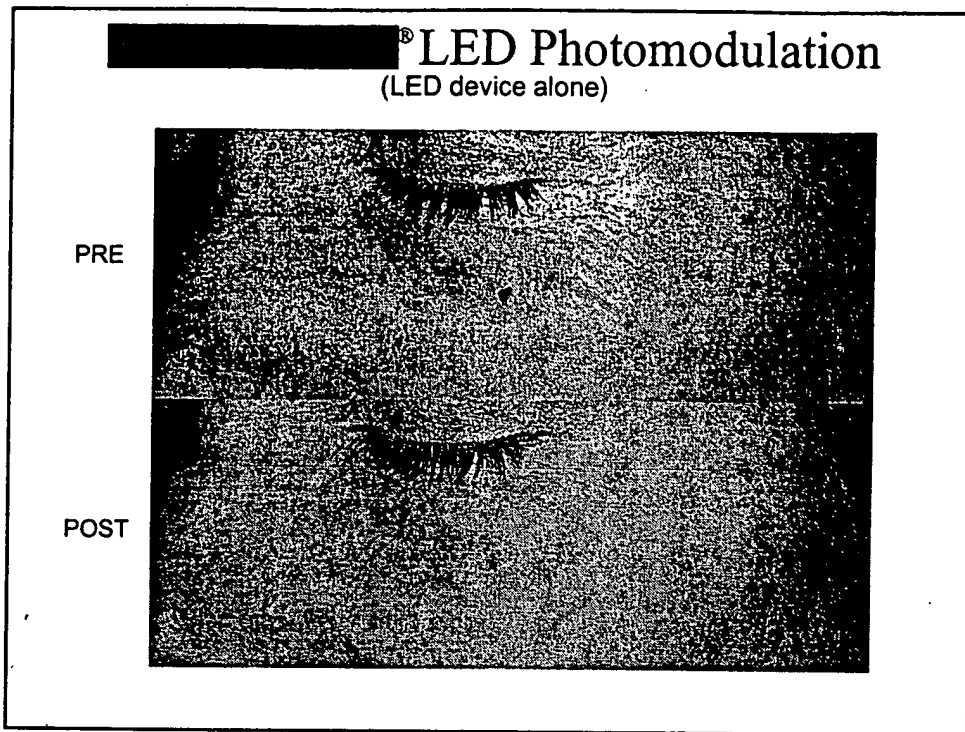


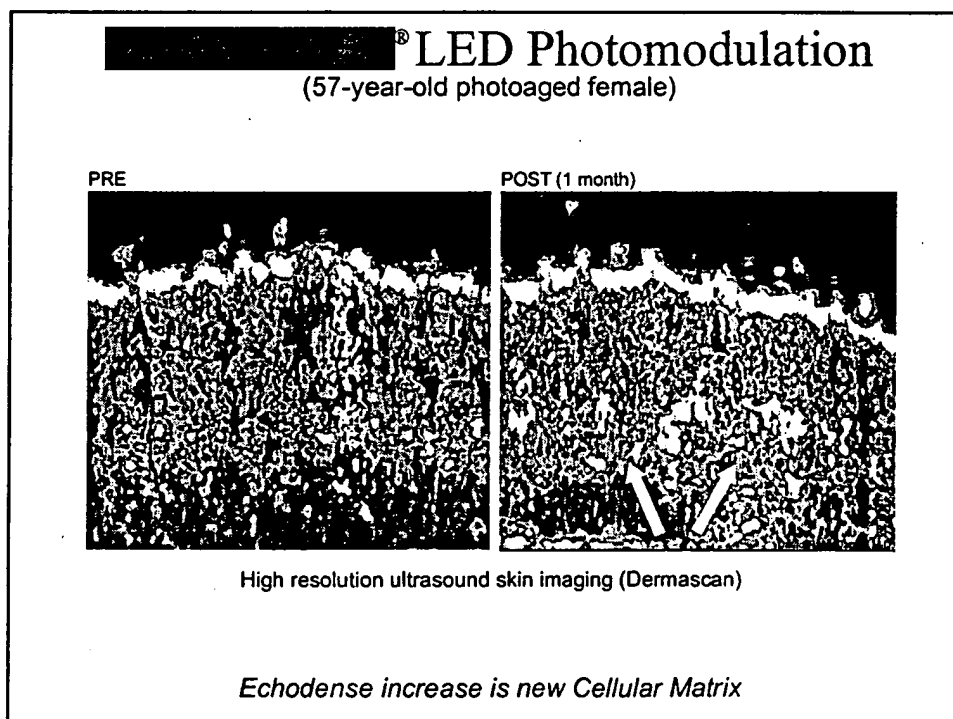
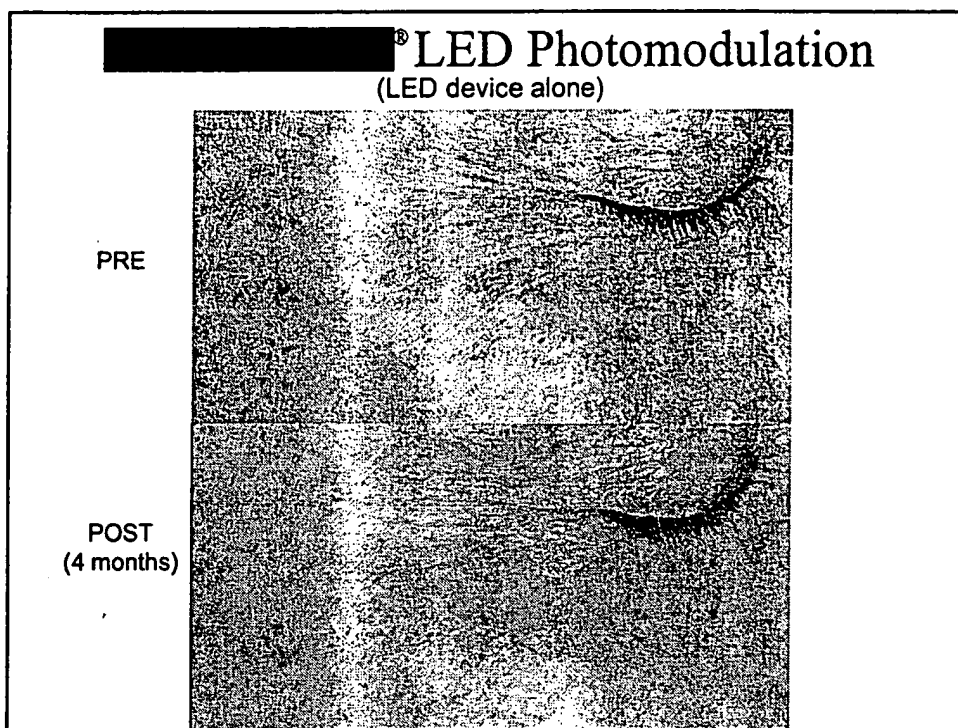












“Photoactivation of Cells”

LED
Photomodulation

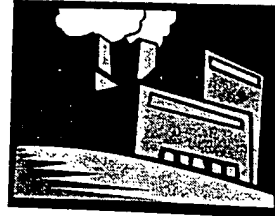
Cell
'Switches'



Boosts Energy Transport

Cell
Energy

Fibroblast Factory

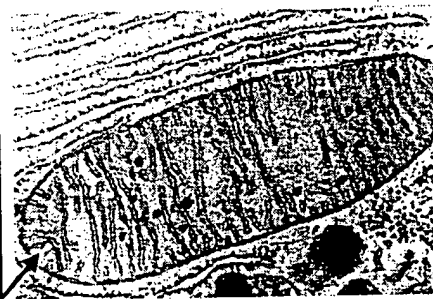
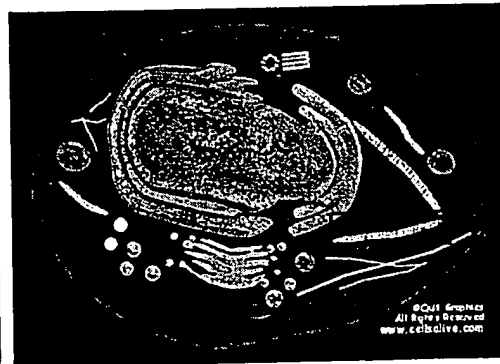


=
NEW
Collagen

The Human Cell

“The Factory”

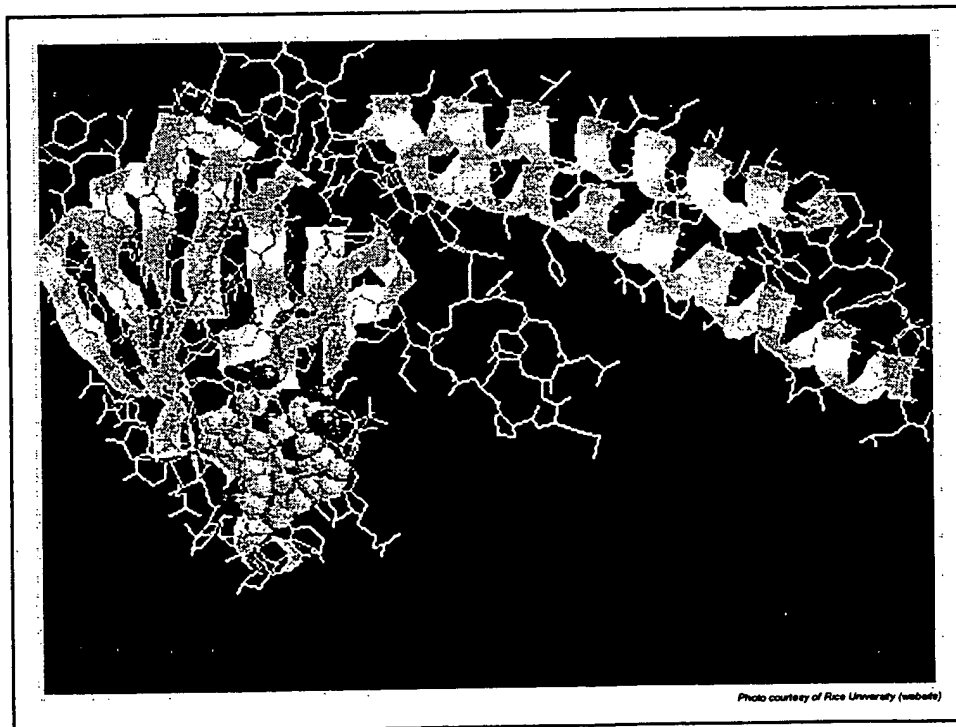
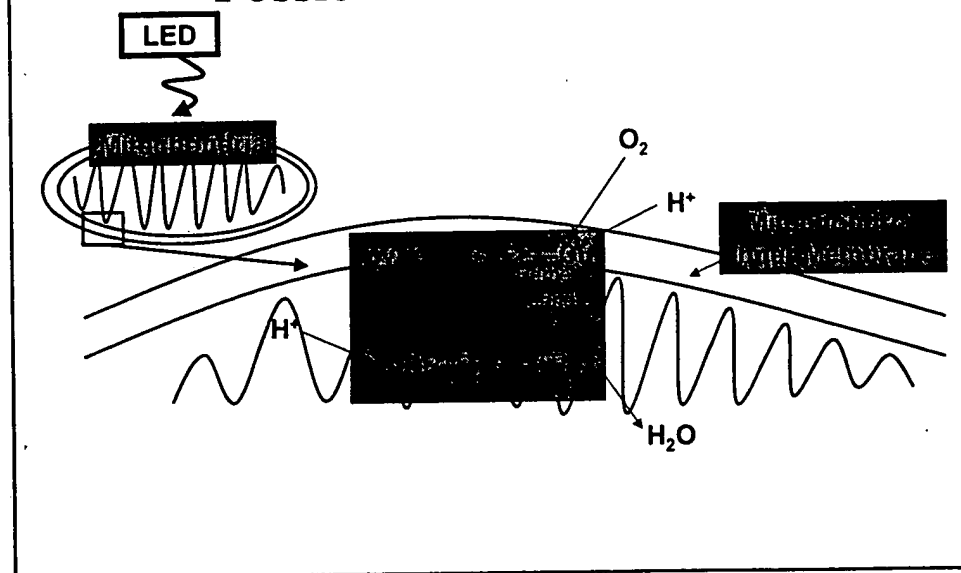
Human Fibroblast Cell



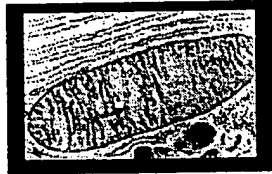
Mitochondria

“The Power Plant”

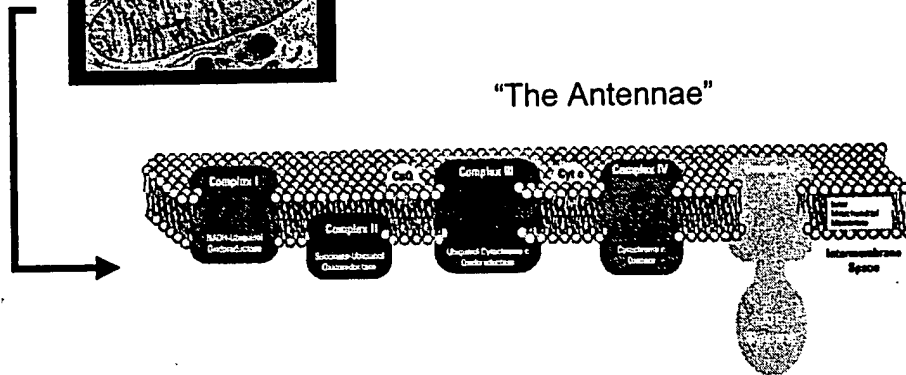
Possible Mechanisms of Action



Electron Transport Chain Overview

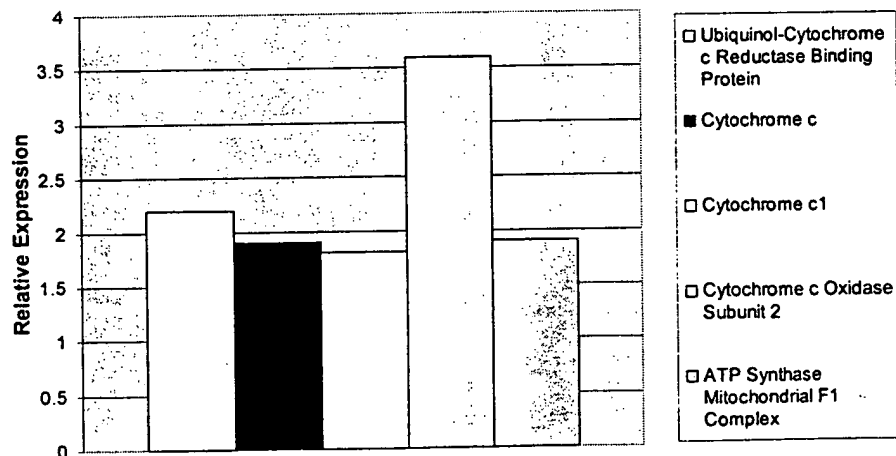


"The Antennae"

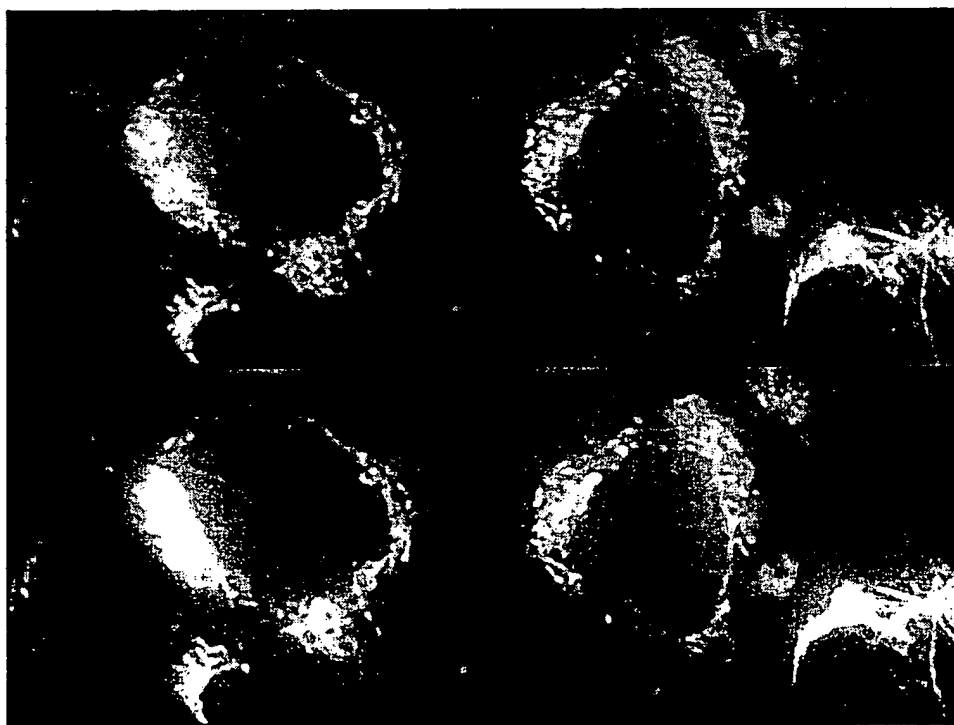


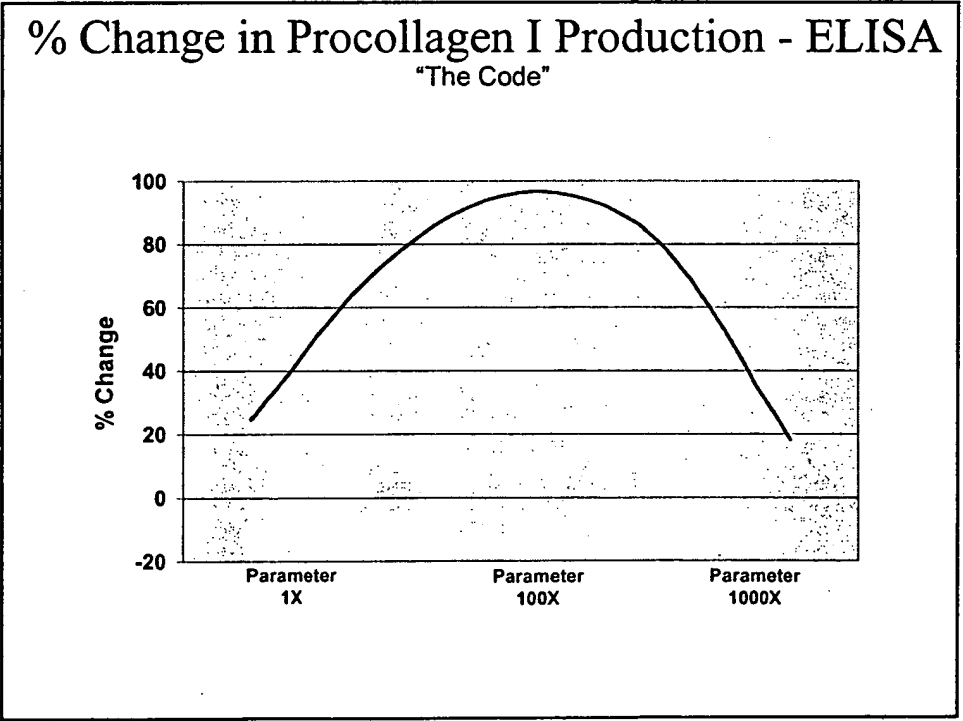
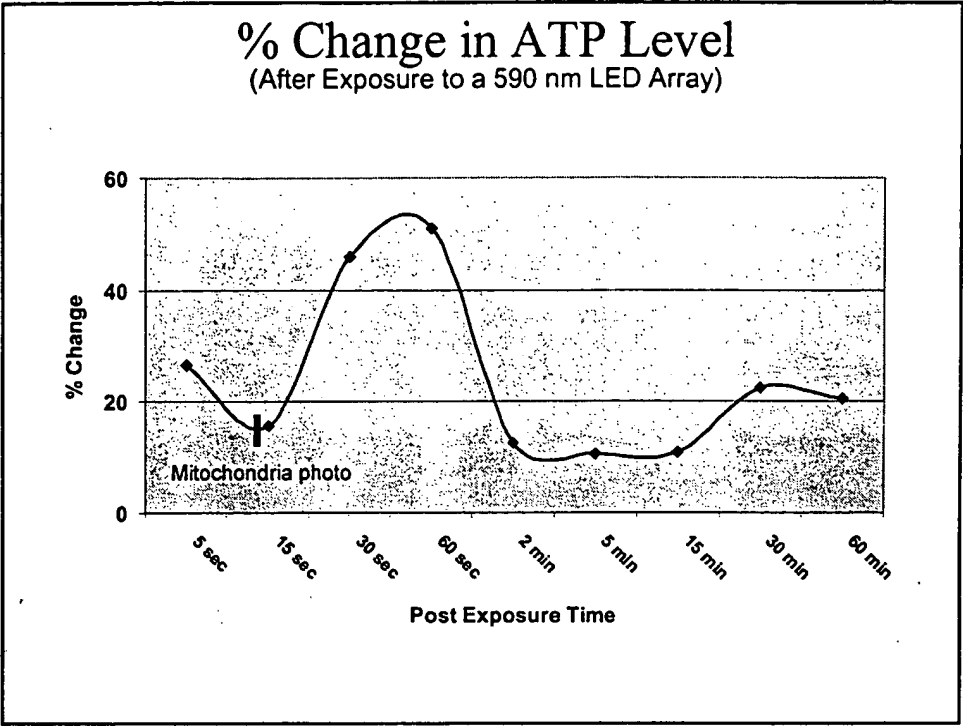
Mitochondrial Electron Transport System Gene Expression Post Exposure to 590 nm LED

"Antennae Molecules"



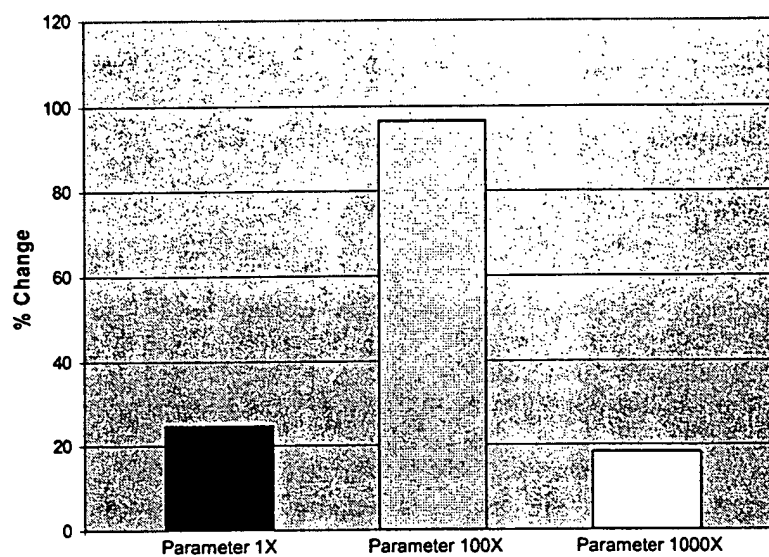
Human Fibroblast Mitochondria





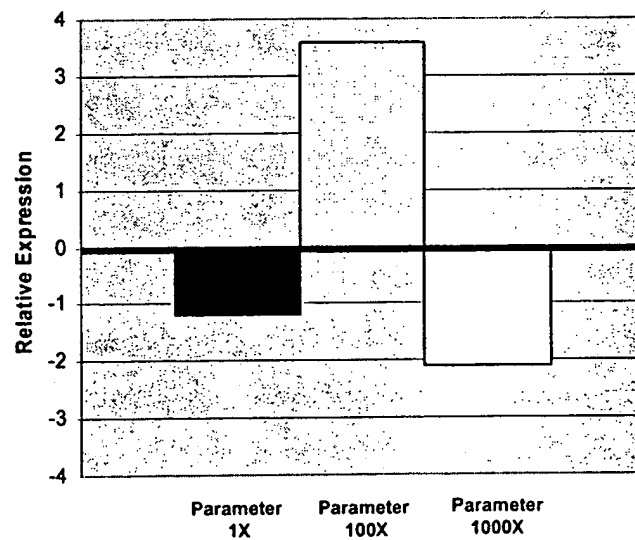
% Change in Procollagen I Production - ELISA

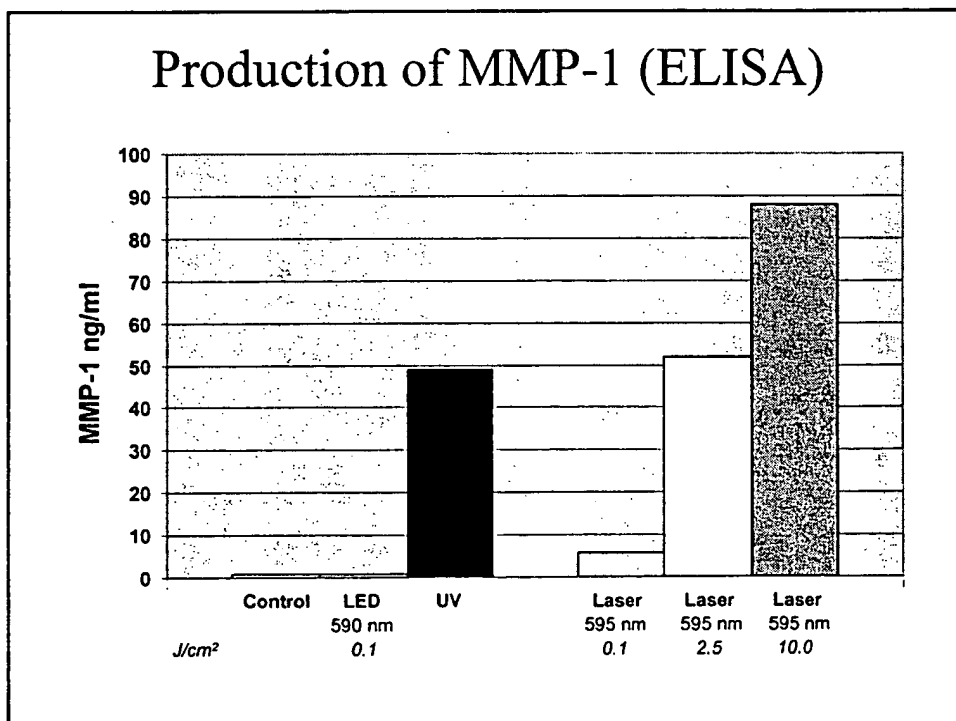
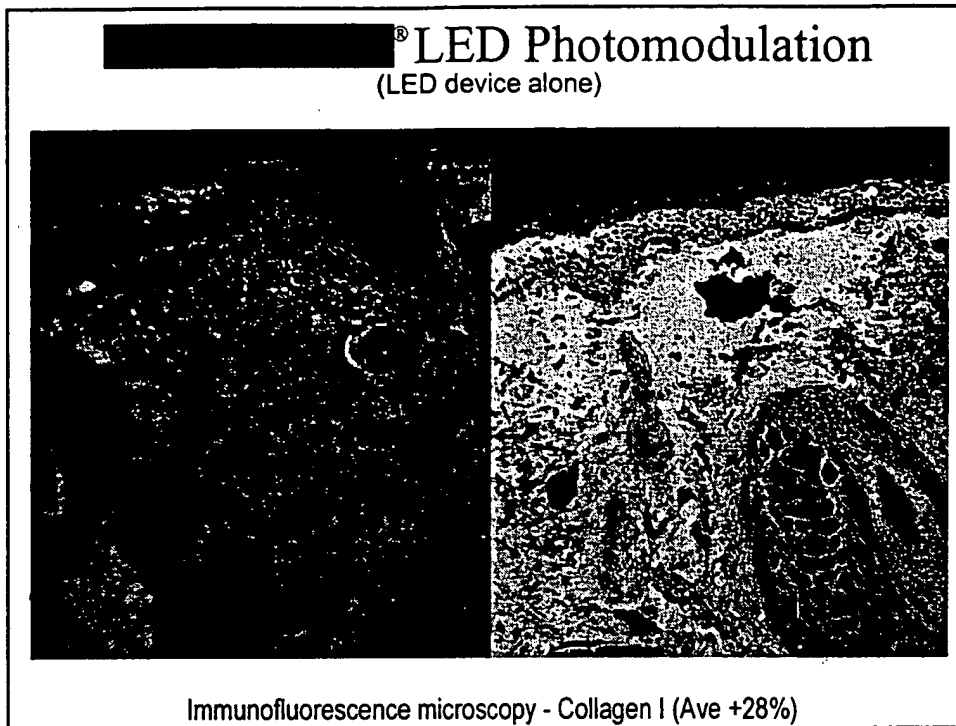
"The Code"



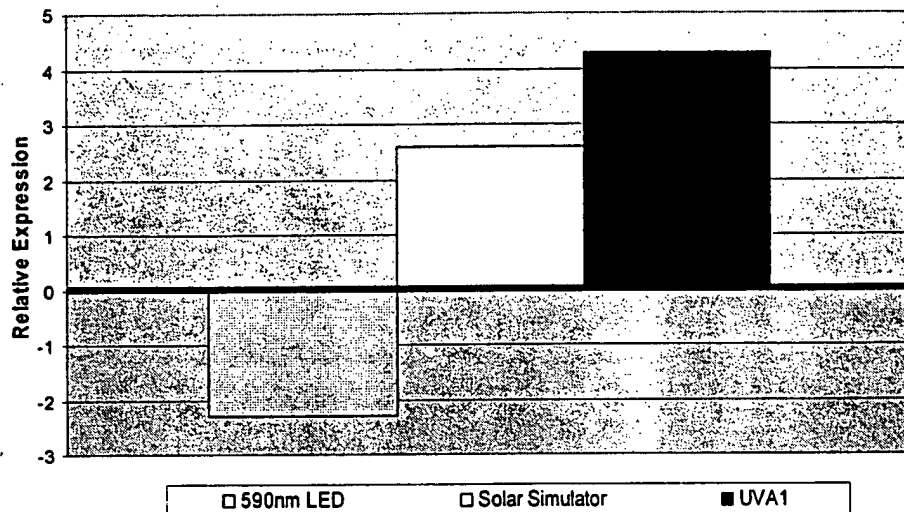
% Change in Cytochrome c oxidase - RT-PCR

"The Code"





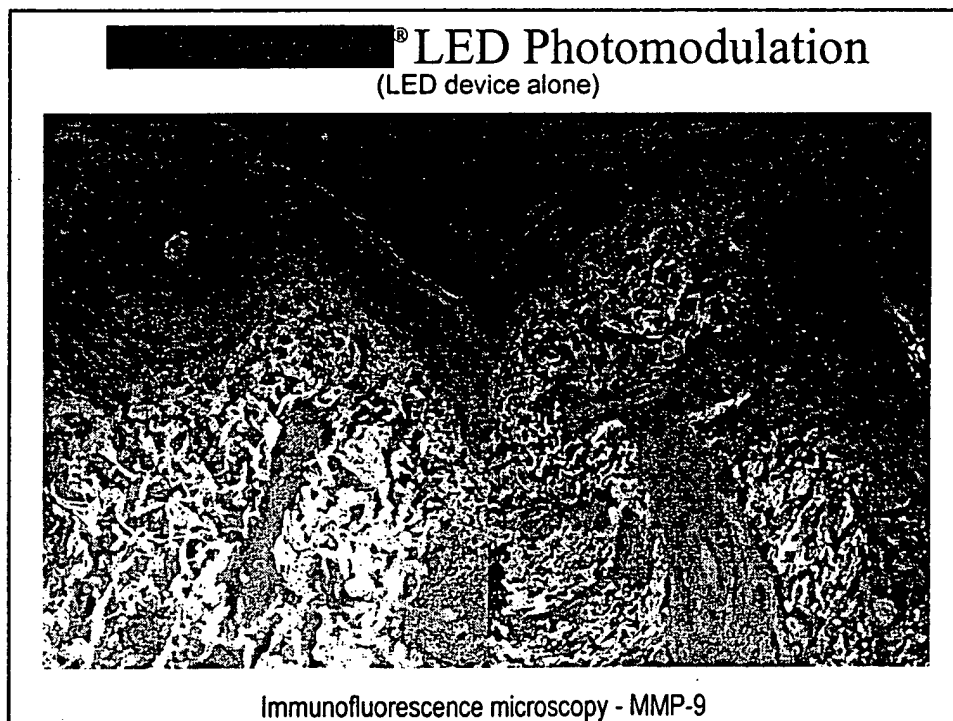
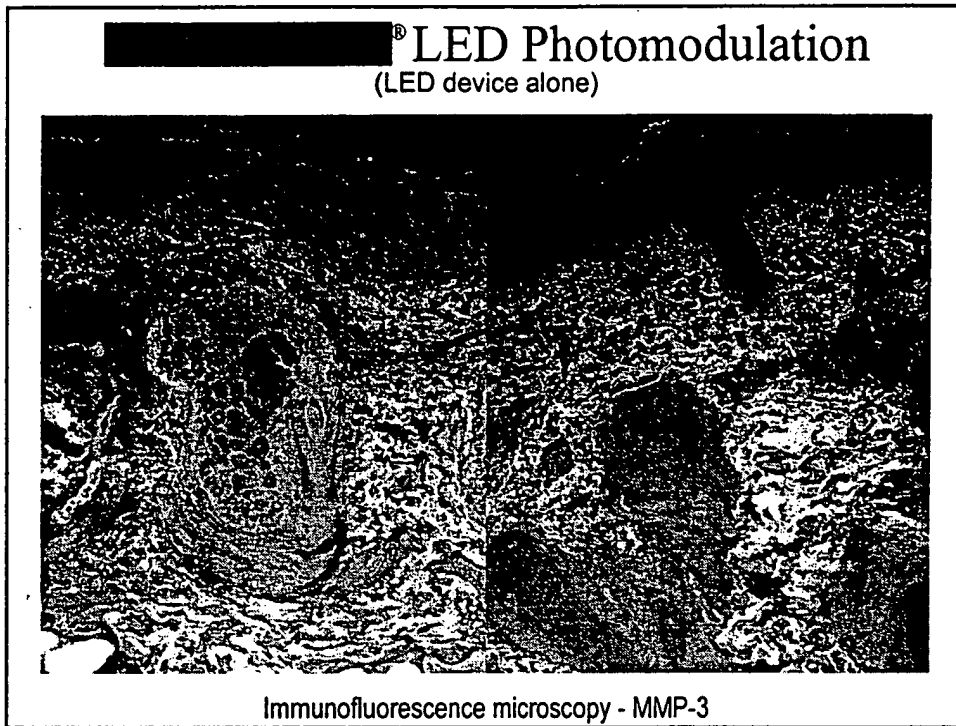
Expression of MMP-1 (RT-PCR)

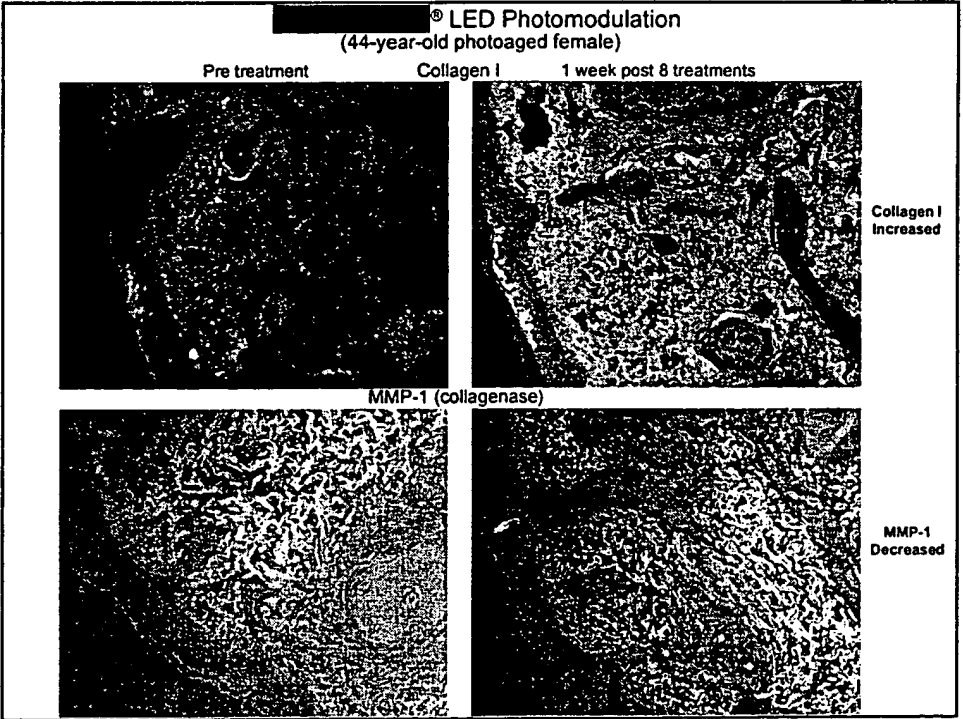
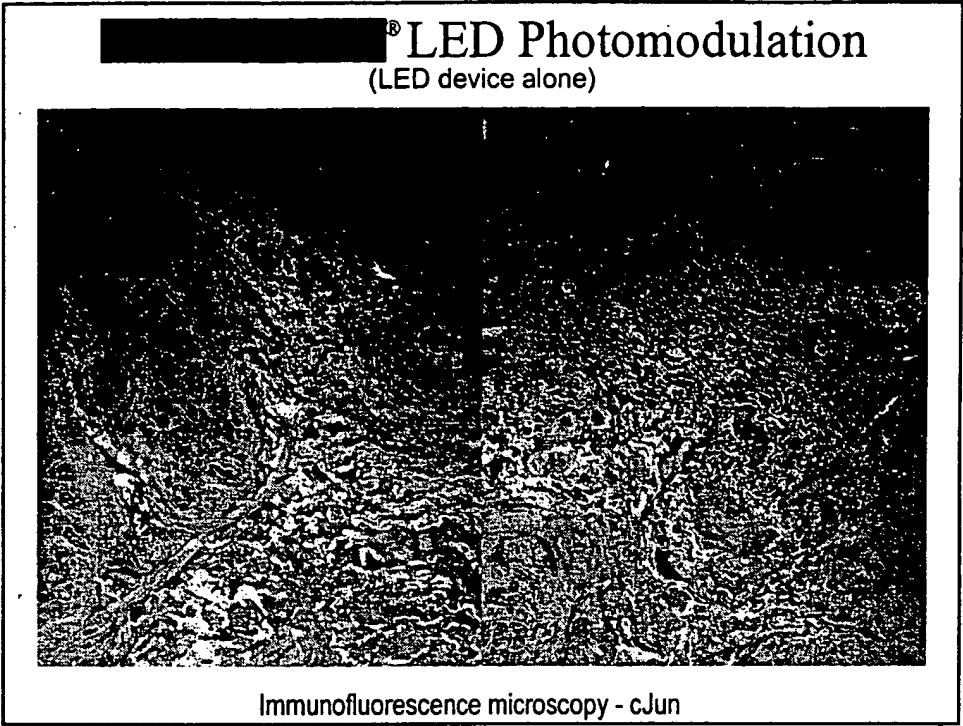


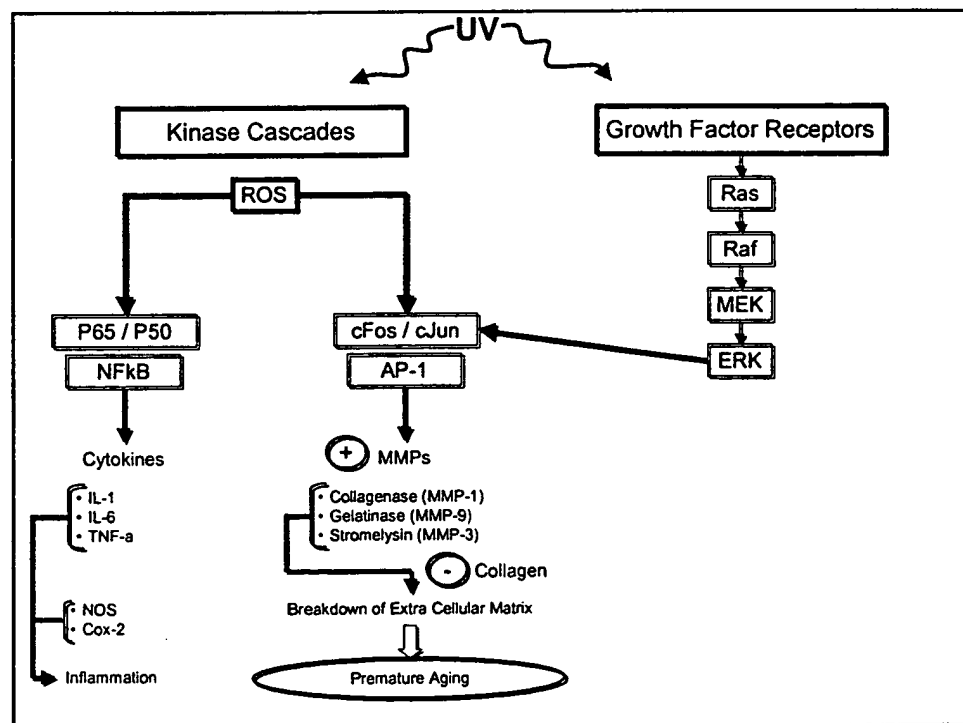
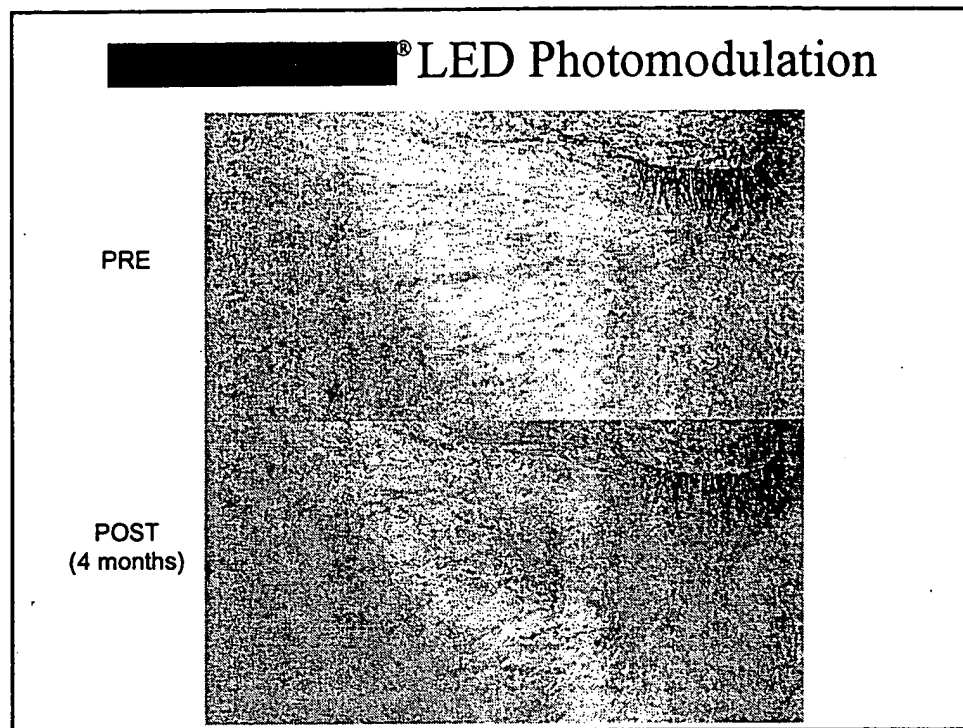
LED Photomodulation (LED device alone)

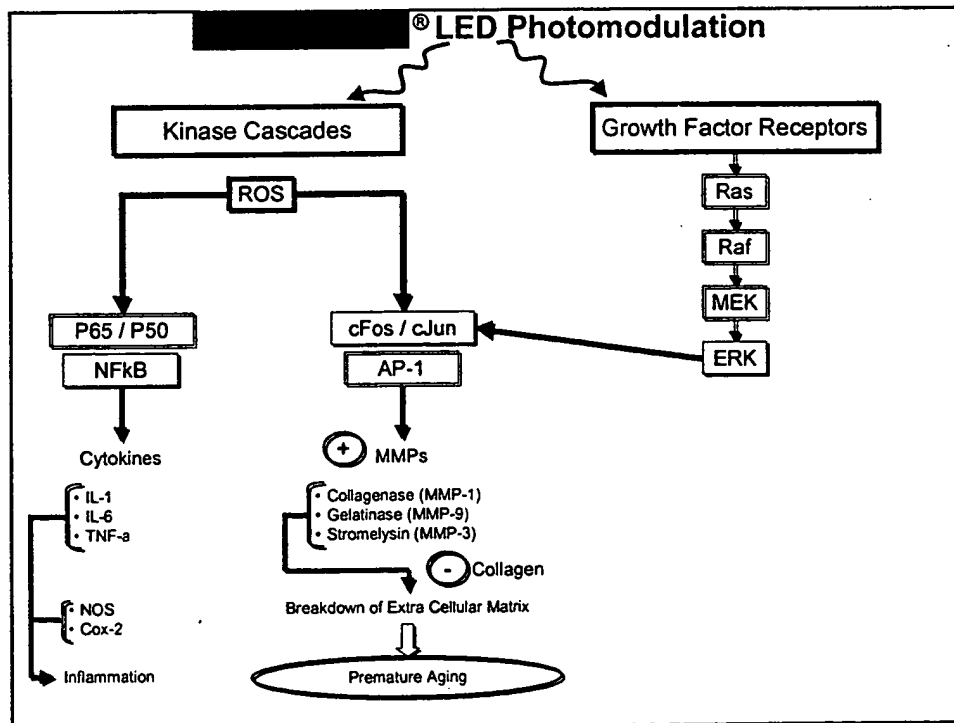
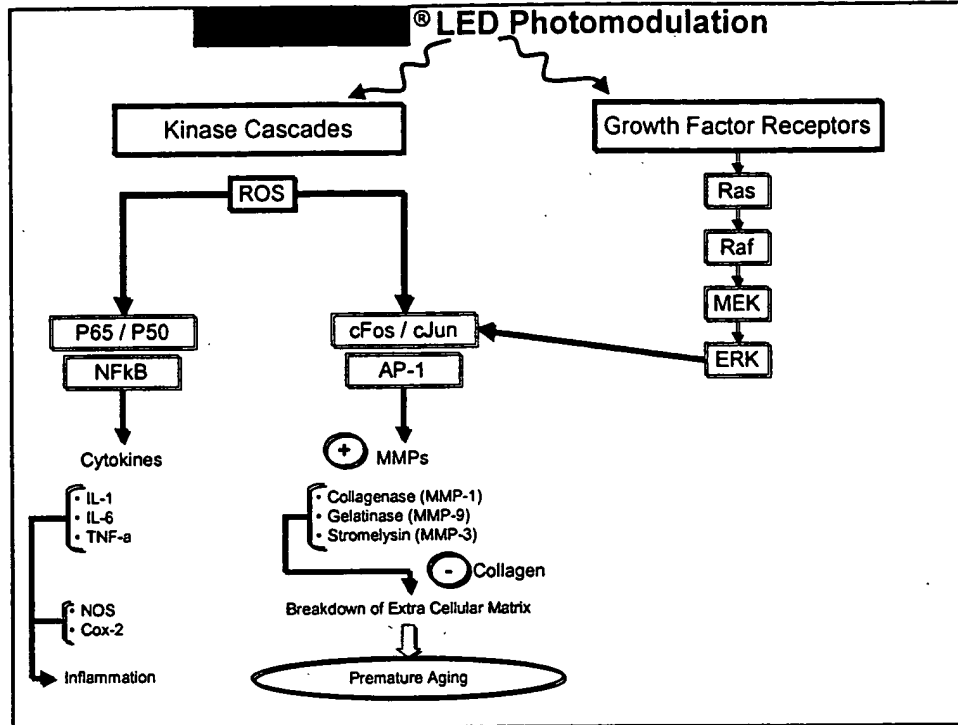


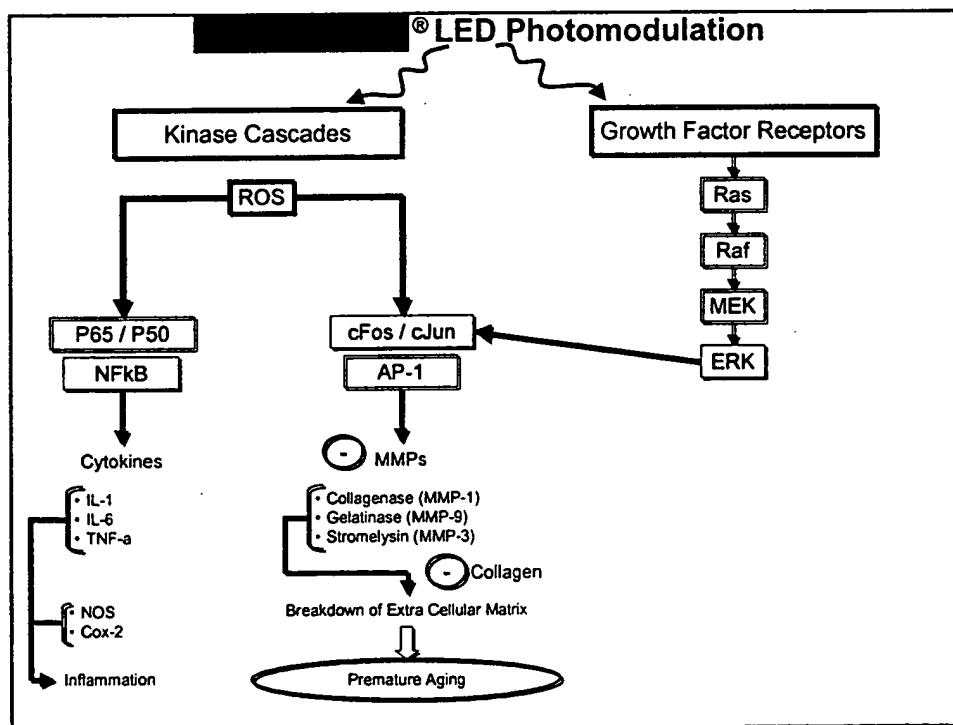
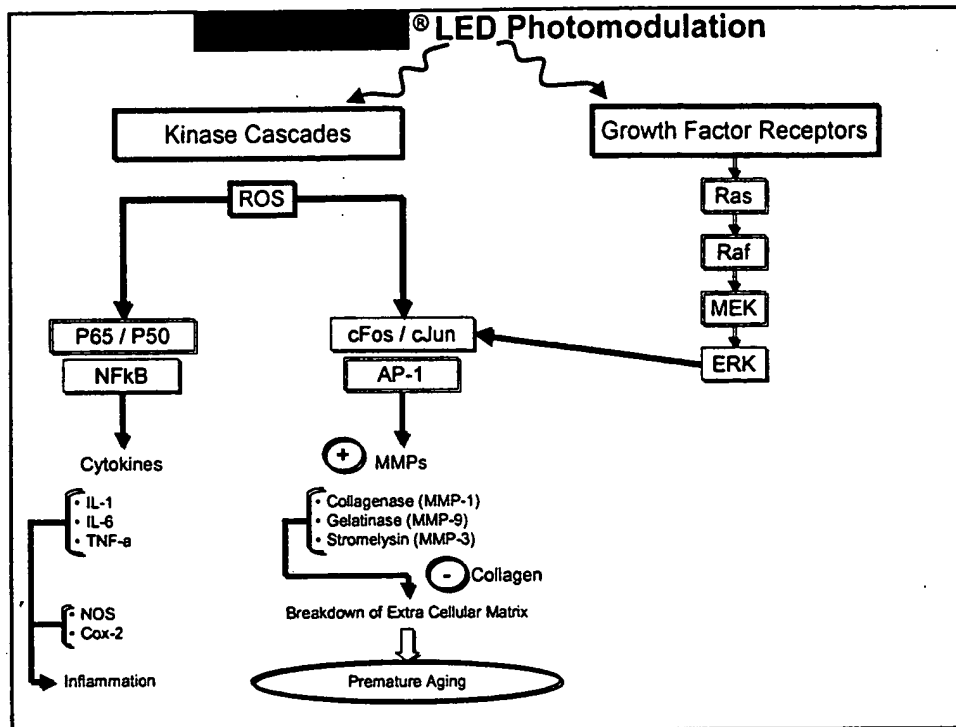
Immunofluorescence microscopy - MMP-1

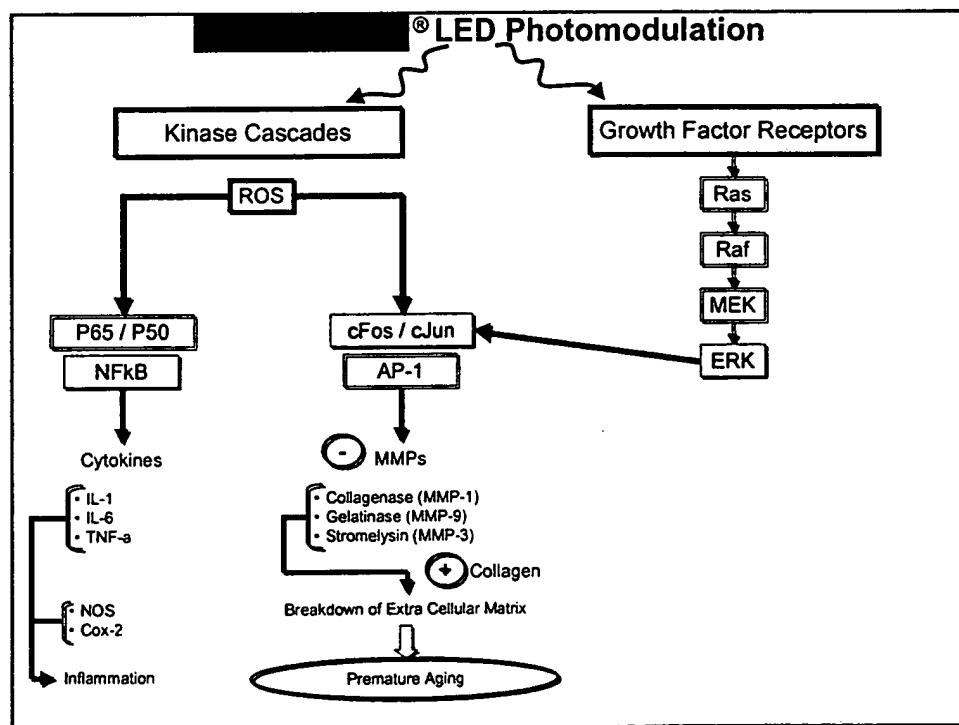
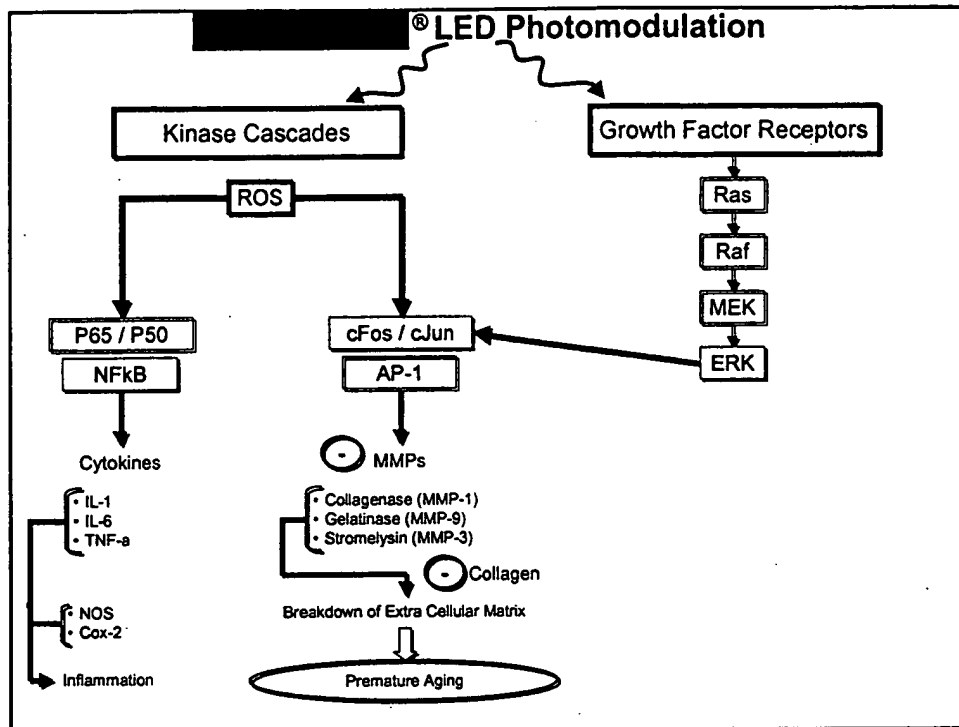


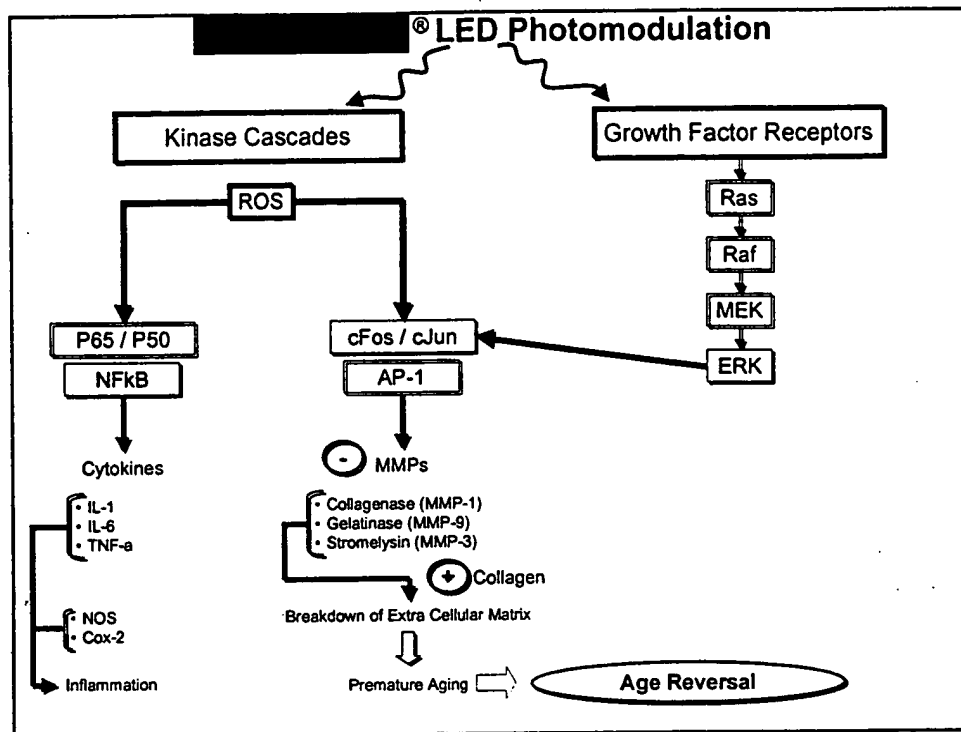






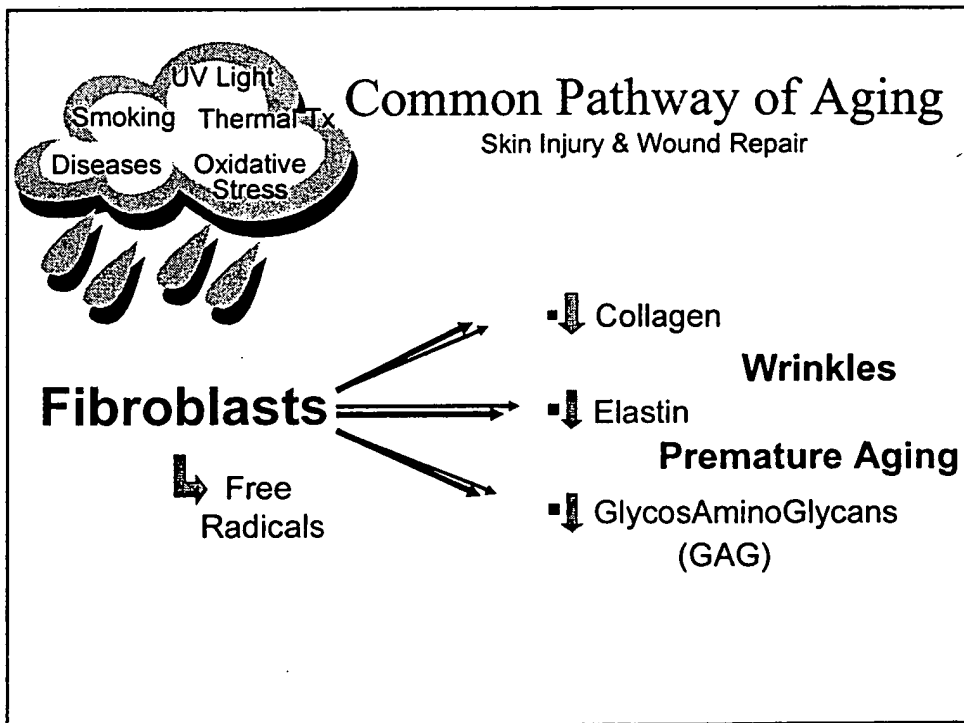
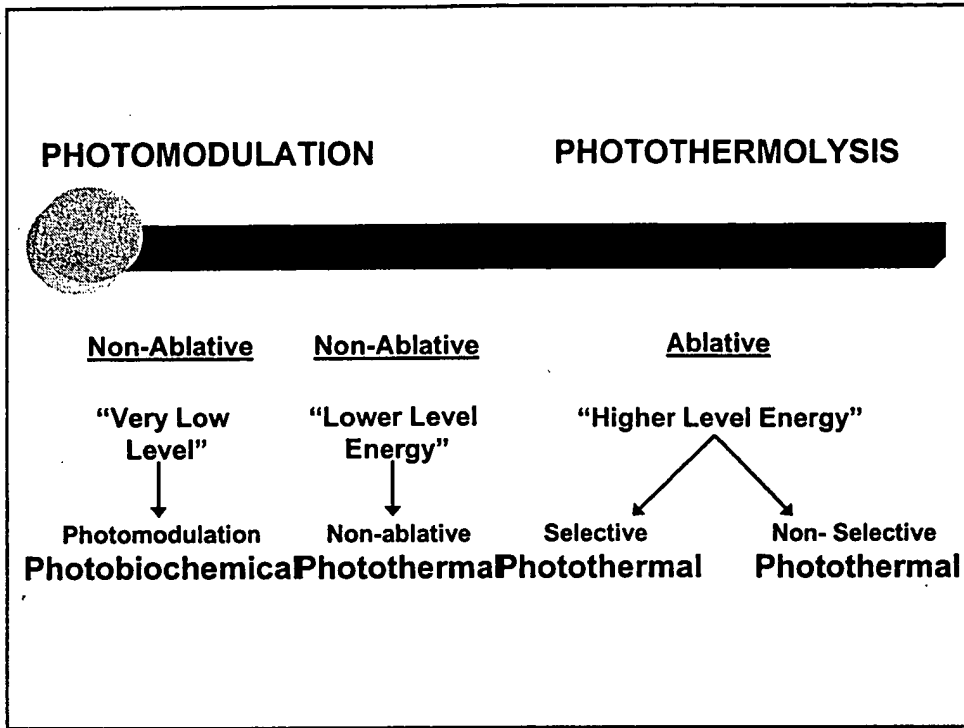






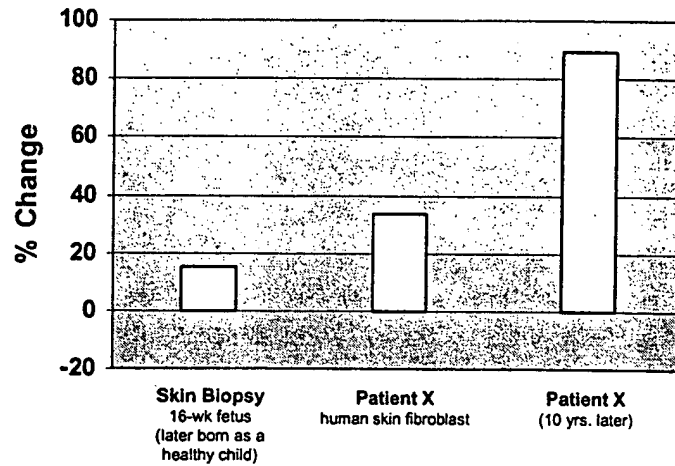
Human Fibroblasts

	UV Light	Retin-A	GentleWaves LED
Collagen I	↓	□	↑
MMP-1	↑	□	↓
cJun	↑	□	↓
cFos	↑	□	↓

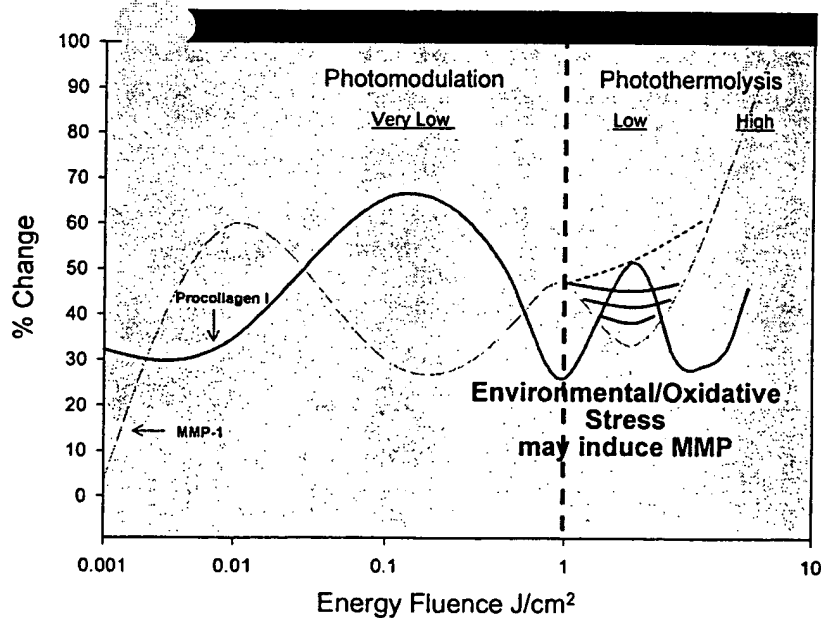


Tissue Culture Fibroblast Cell Assay

% Increase in Collagen from LED Photomodulation
Increases as skin becomes more photoaged



Interaction of Light and Fibroblasts



“Photoactivation of Cells”

LED
Photomodulation

“Factory” needs sufficient “Raw Materials” to
produce maximum “Products”

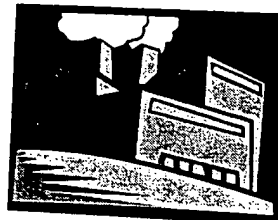
Cell
‘Switches’



Boosts Energy Transport

Cell
Energy

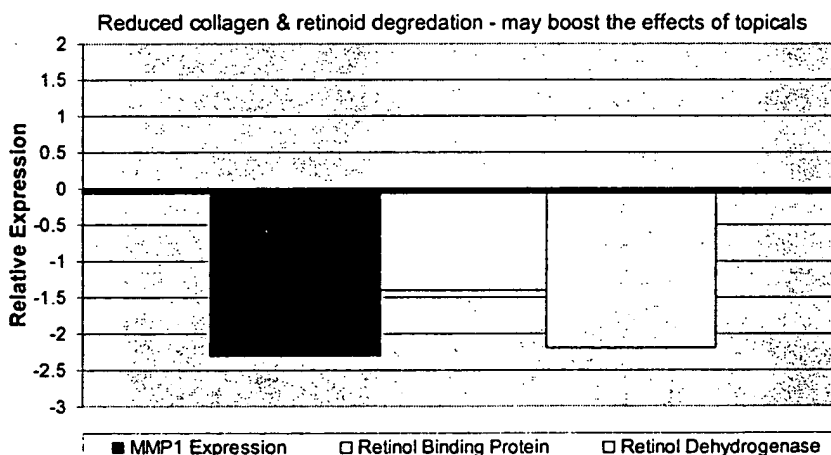
Fibroblast Factory



=
NEW
Collagen

A role for scientifically designed
cosmeceuticals & nutraceuticals

Gene Expression Post Exposure to [REDACTED]® 590 nm LED Photomodulation



Multi-center Clinical Trial

- 30 photoaged subjects were treated using a proprietary LED light device + Skin Rejuvenation Kit for reducing the appearance of:
 - Wrinkles
 - Pigmentation
 - Redness
 - Pore size
 - Roughness

Study Design

- Multi-center clinical trial
- 30 photoaged subjects
- Skin biopsies were obtained at intervals of 4, 12 and 16 weeks post treatment and evaluated for ECM changes



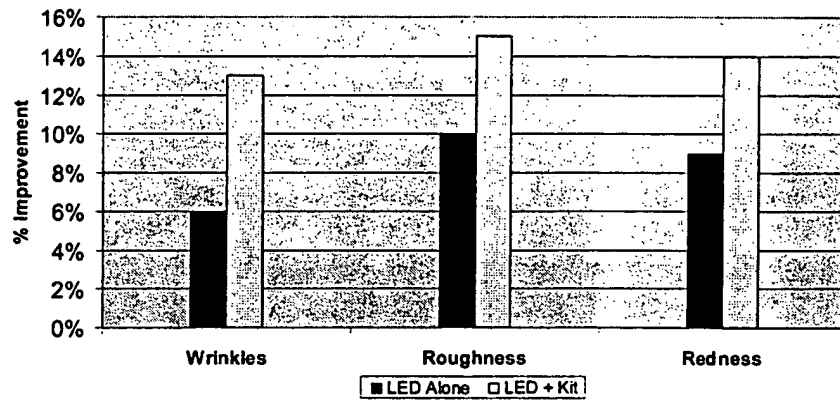
GentleWaves® Skin Care Kit

- **Gentle Cleansing Complex**
Cleans Green Tea and Vitamin C based cleanser.
- **Advanced Daily Correction**
A unique combination of Vitamin C, Pro Vitamin B5 and various Phytochemicals for photoaging.
- **Nightly Skin Repair**
Contains Vitamin E in addition to Coenzyme Q10, Green Tea, SOD and Phytochemicals.
- **Day-to-Day Defense** SPF 20
Broad spectrum UVA/UVB with Zinc Oxide and Titanium Dioxide and antioxidants and phytochemicals.

Products are suitable for all skin types including sensitive skin. Products are Glycolic Acid free, oil-free, non-comedogenic, never tested on animals.

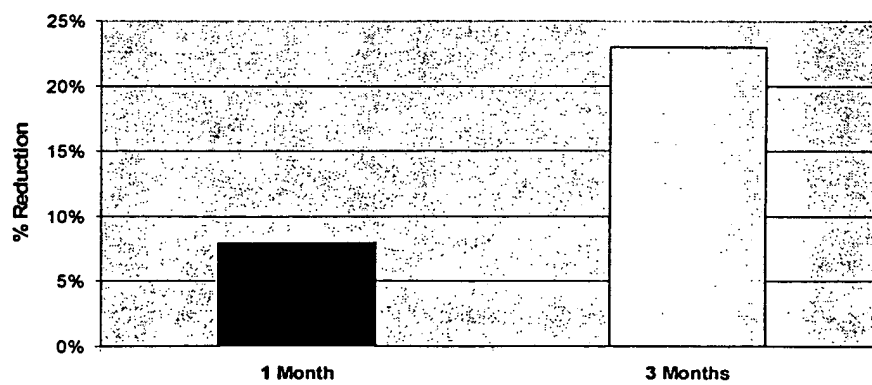
Global Improvement

LED Alone vs. LED + Kit
4 months post treatment

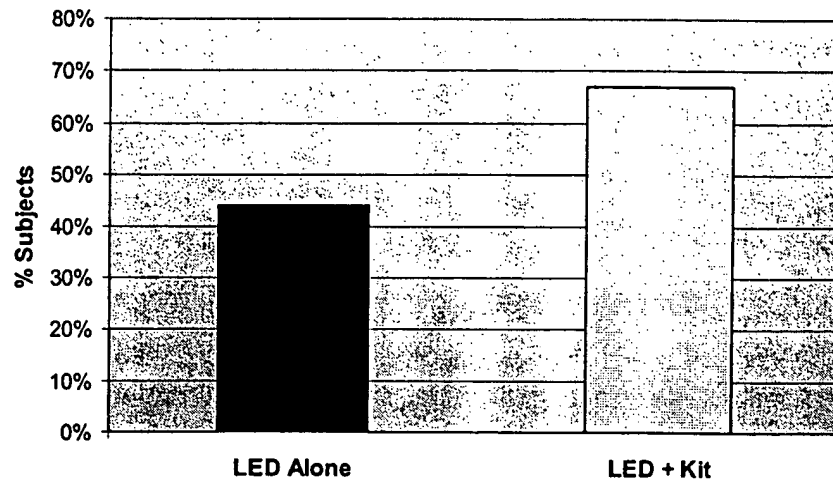


% Reduction in Wrinkles - Primos

LED + Kit

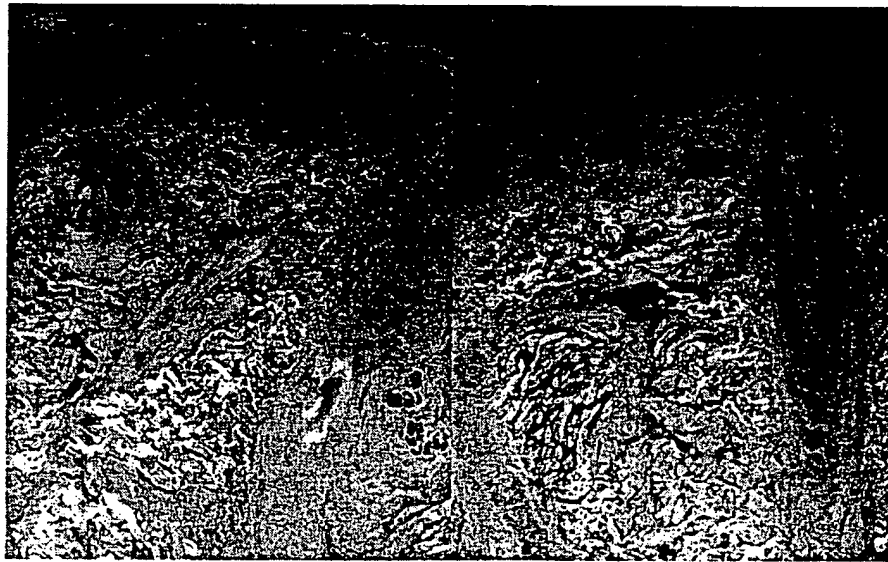


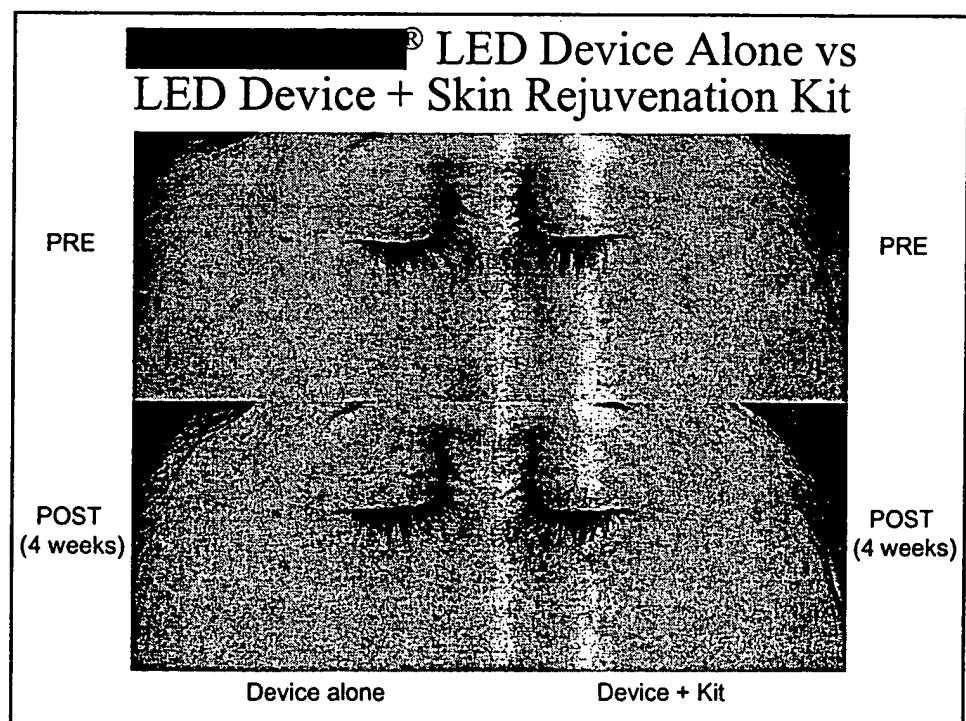
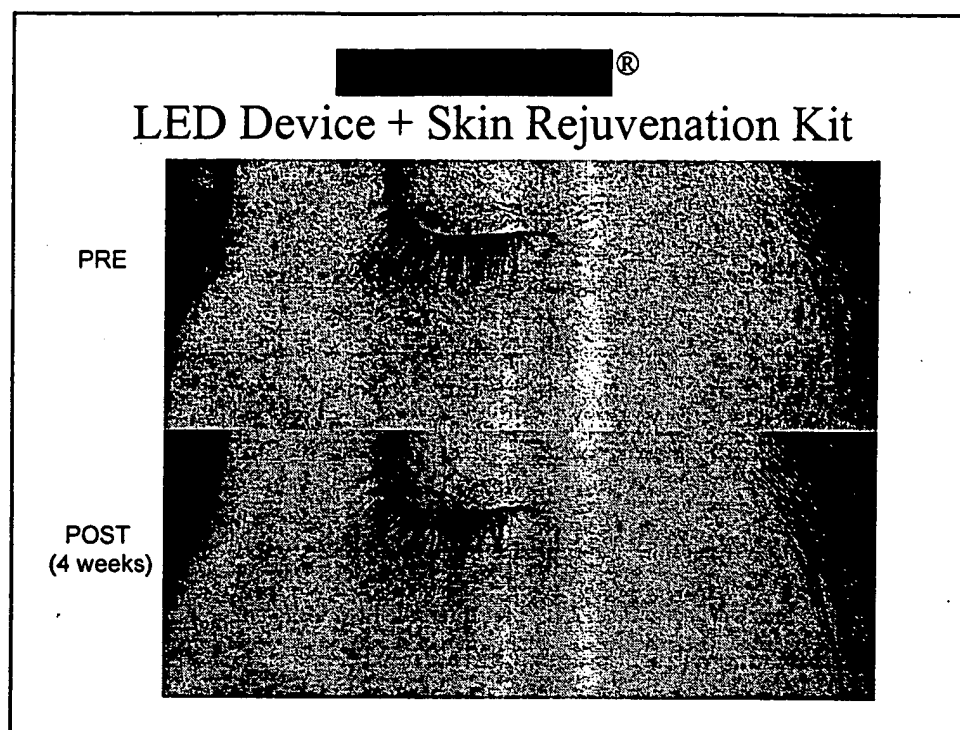
% of Subjects Showing Increased Moisture (4 months post treatment)



Decreased MMP-1 post tx

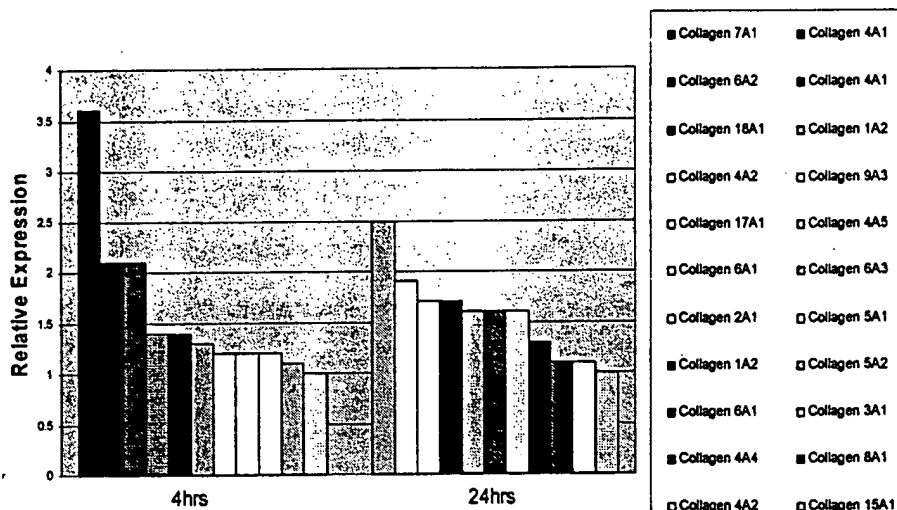
██████████[®] LED Photomodulation + Skin Rejuvenation Kit





Collagen Gene Expression

Post Exposure to 590 nm LED



"Beauty & Science"

Transforming the Landscape of
Skin Rejuvenation

PHOTOMODULATION

PHOTOTHERMOLYSIS



Non-Ablative

Non-Ablative

Ablative

"Very Low
Level"

"Lower Level
Energy"

"Higher Level Energy"

↓
Photomodulation

↓
Non-ablative

↙
Selective

↘
Non- Selective

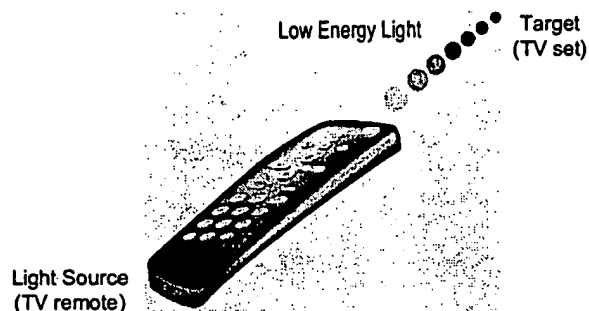
Photobiochemical

Photothermal

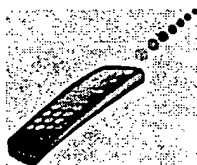
Photothermal

Photothermal

“LED Photomodulation”



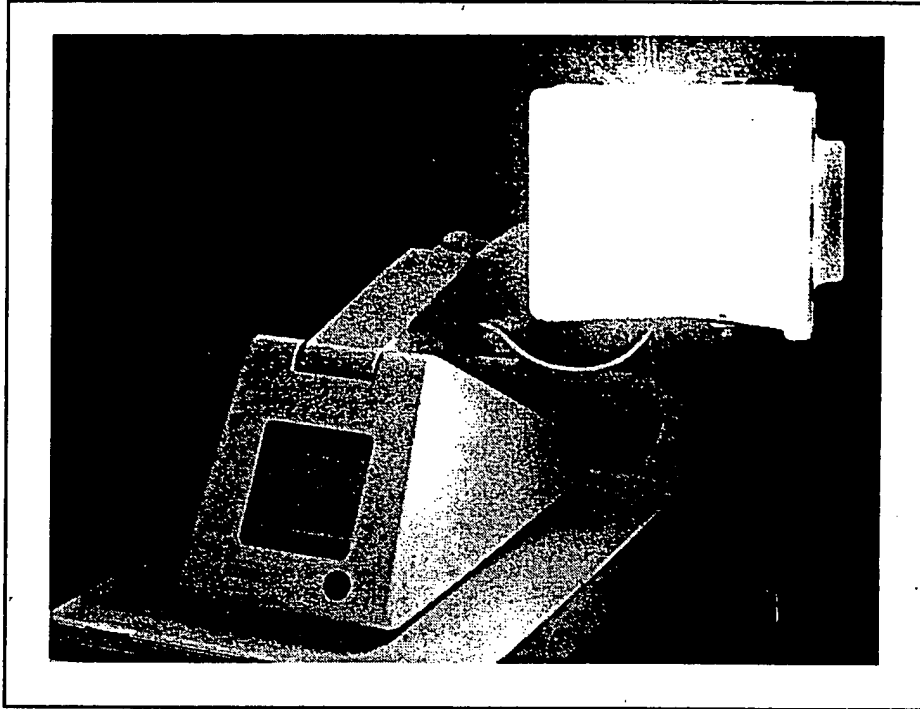
- Light signal from remote turns switches on/off - thus 'energizing' the TV set
- However, if not programmed with the correct 'code' for the brand of TV, then light signal has no effect



“Photomodulation”

“Like the TV remote control, Photomodulation activates/inhibits ‘switches’ in living cells with properly ‘coded’ low energy light.

Thus, like a TV remote control, low energy LEDs can produce a much greater effect than expected.”

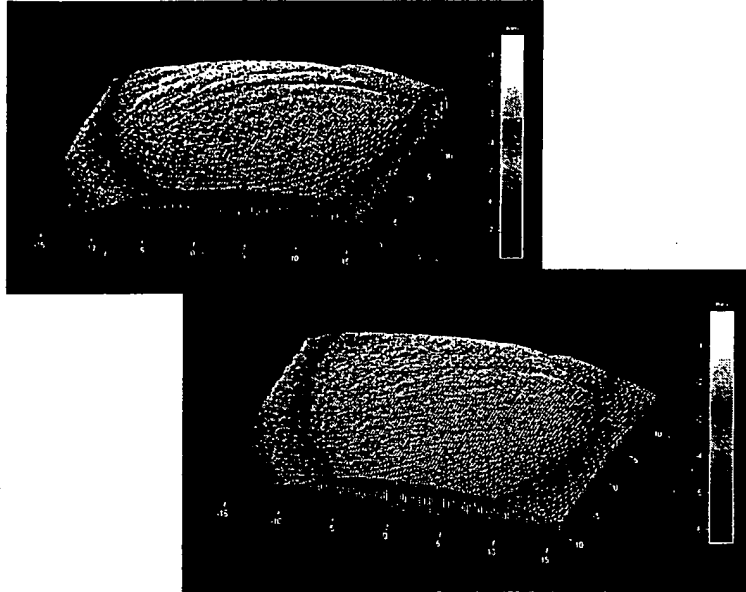


Preliminary Trial Results

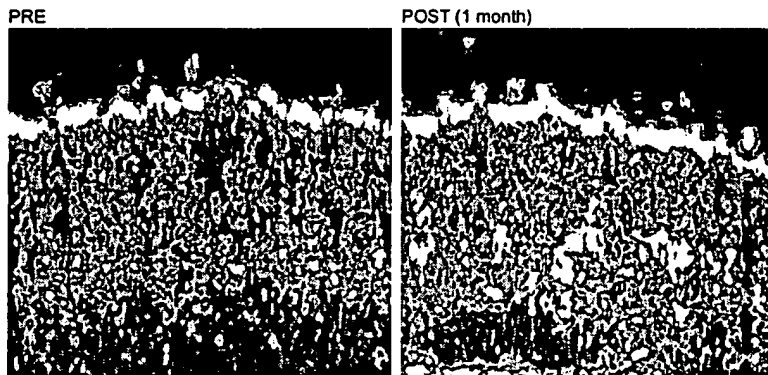
% change improvement from 1 week • 2 months and from 2 months • 4 months



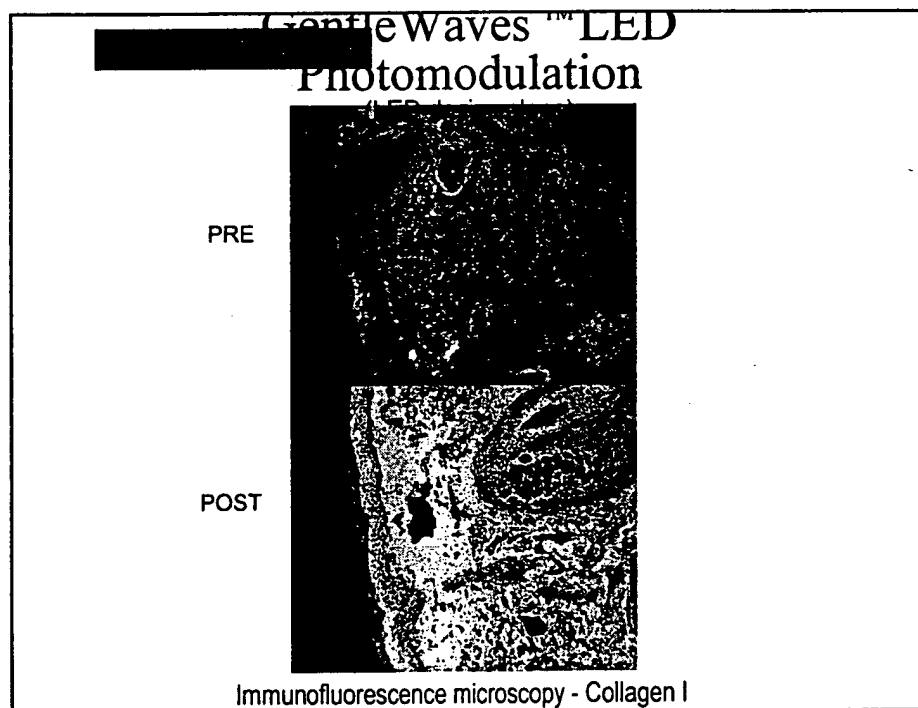
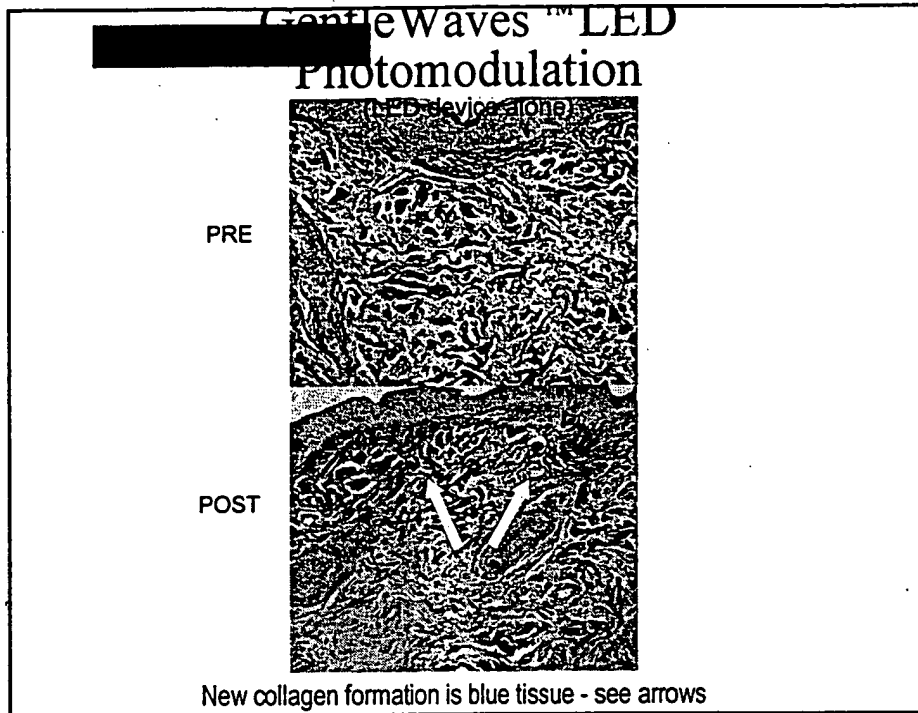
Primos Digital Surface Profilometry (LED device alone)

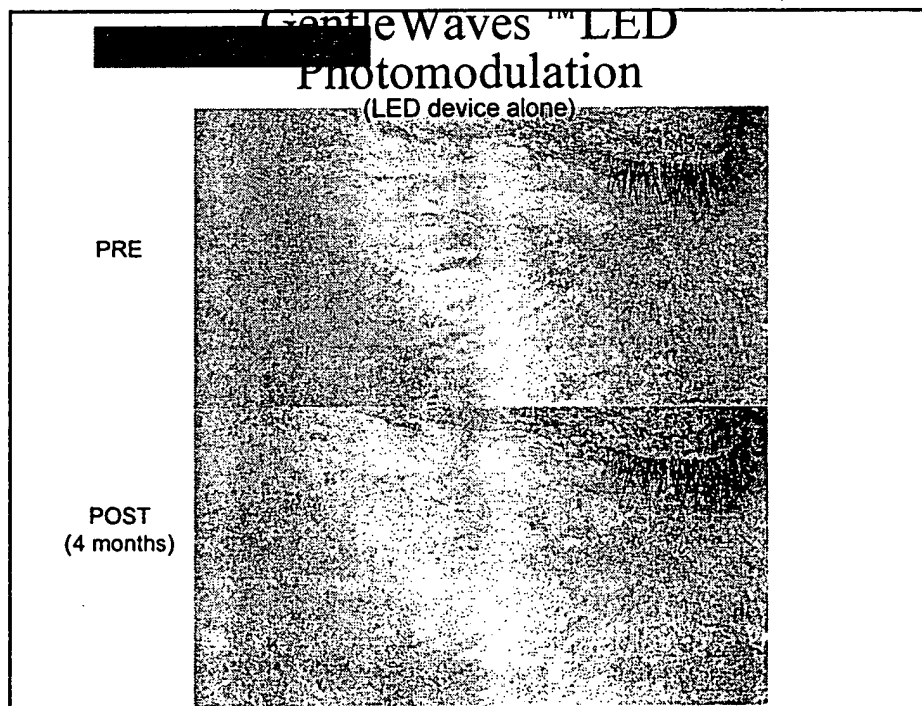
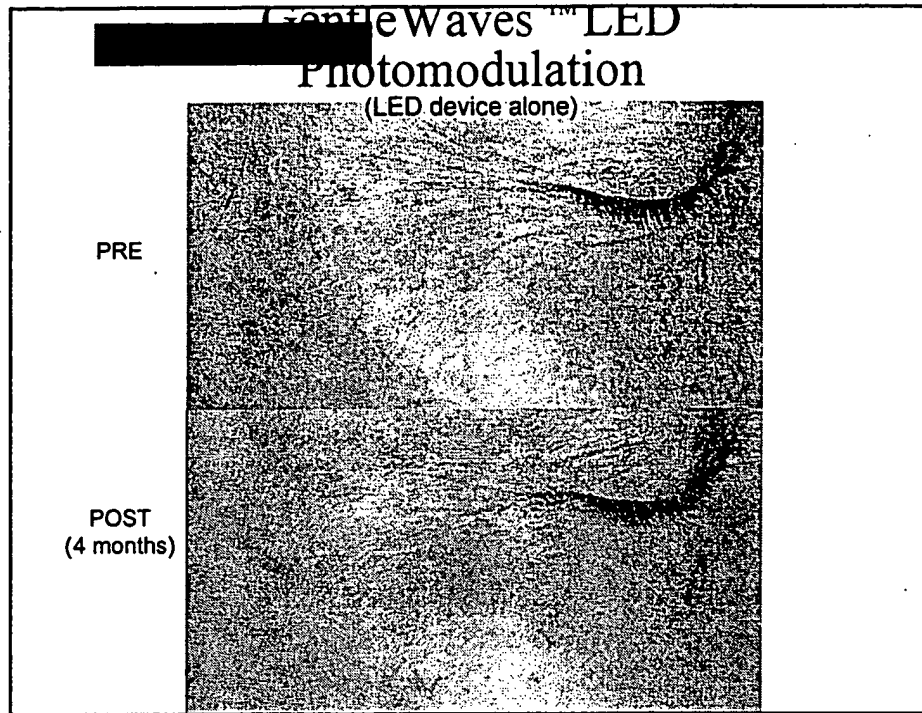


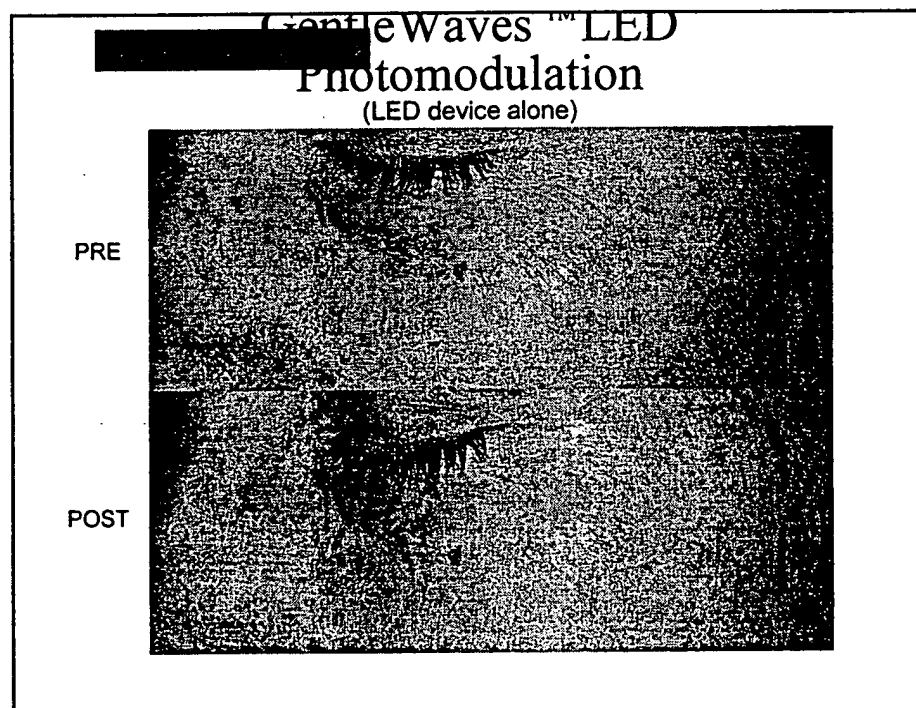
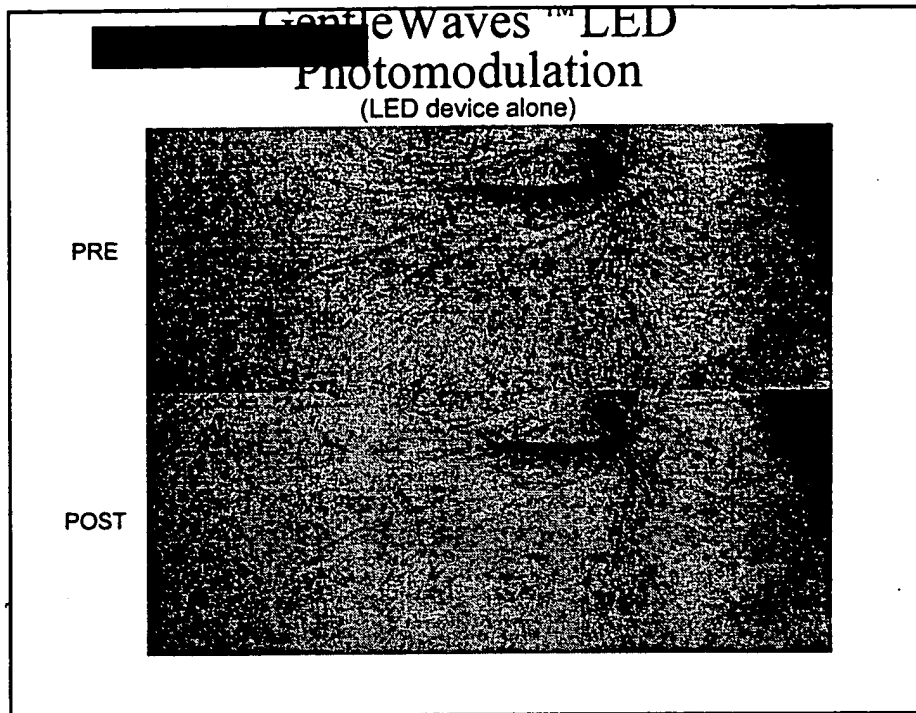
GentleWaves™ LED Photomodulation (57-year-old photoaged female)

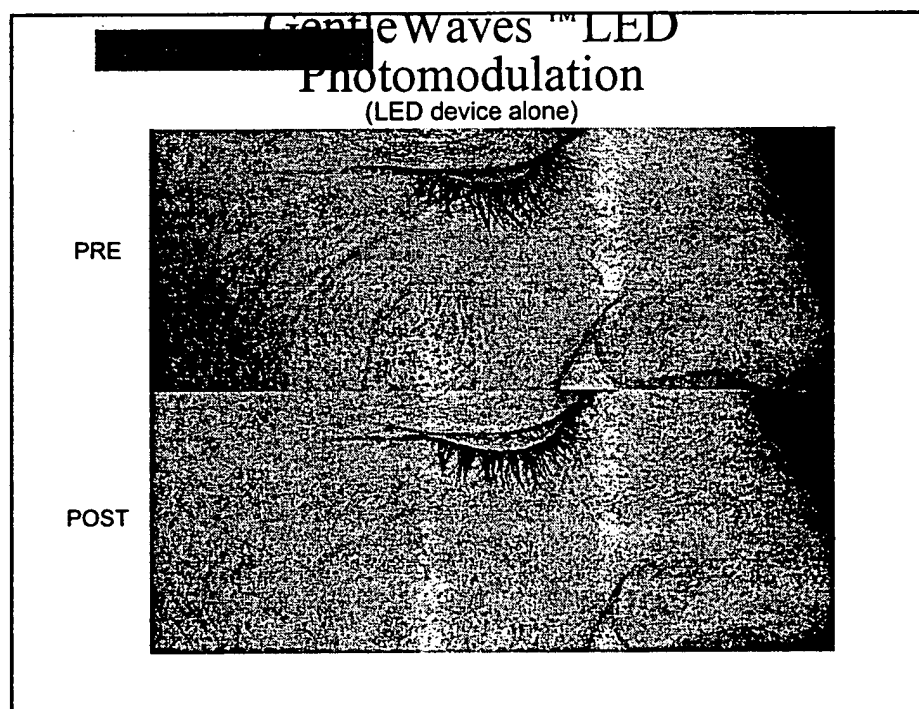
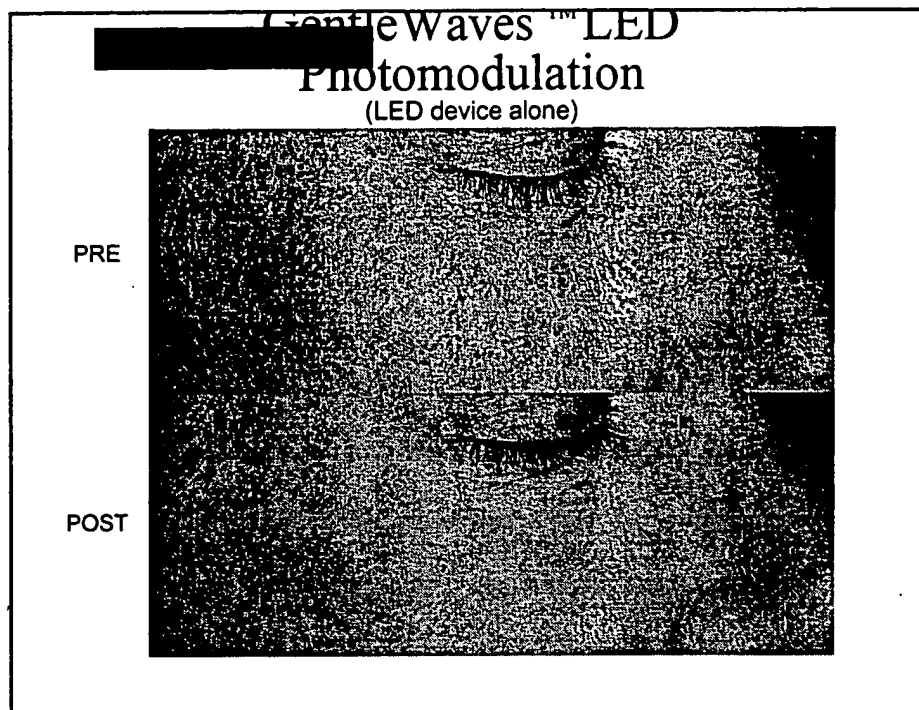


High resolution ultrasound skin imaging (Dermascan)



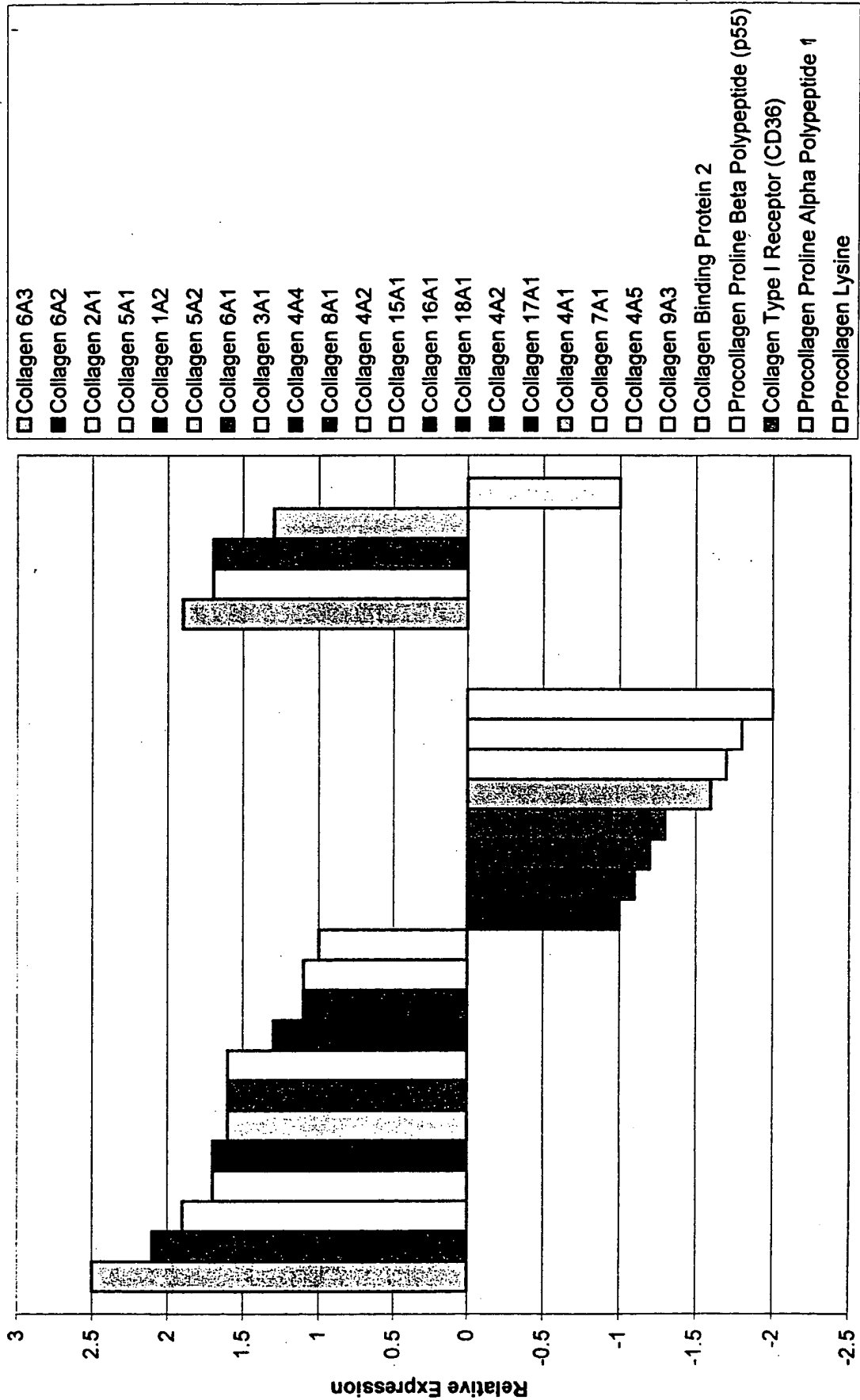








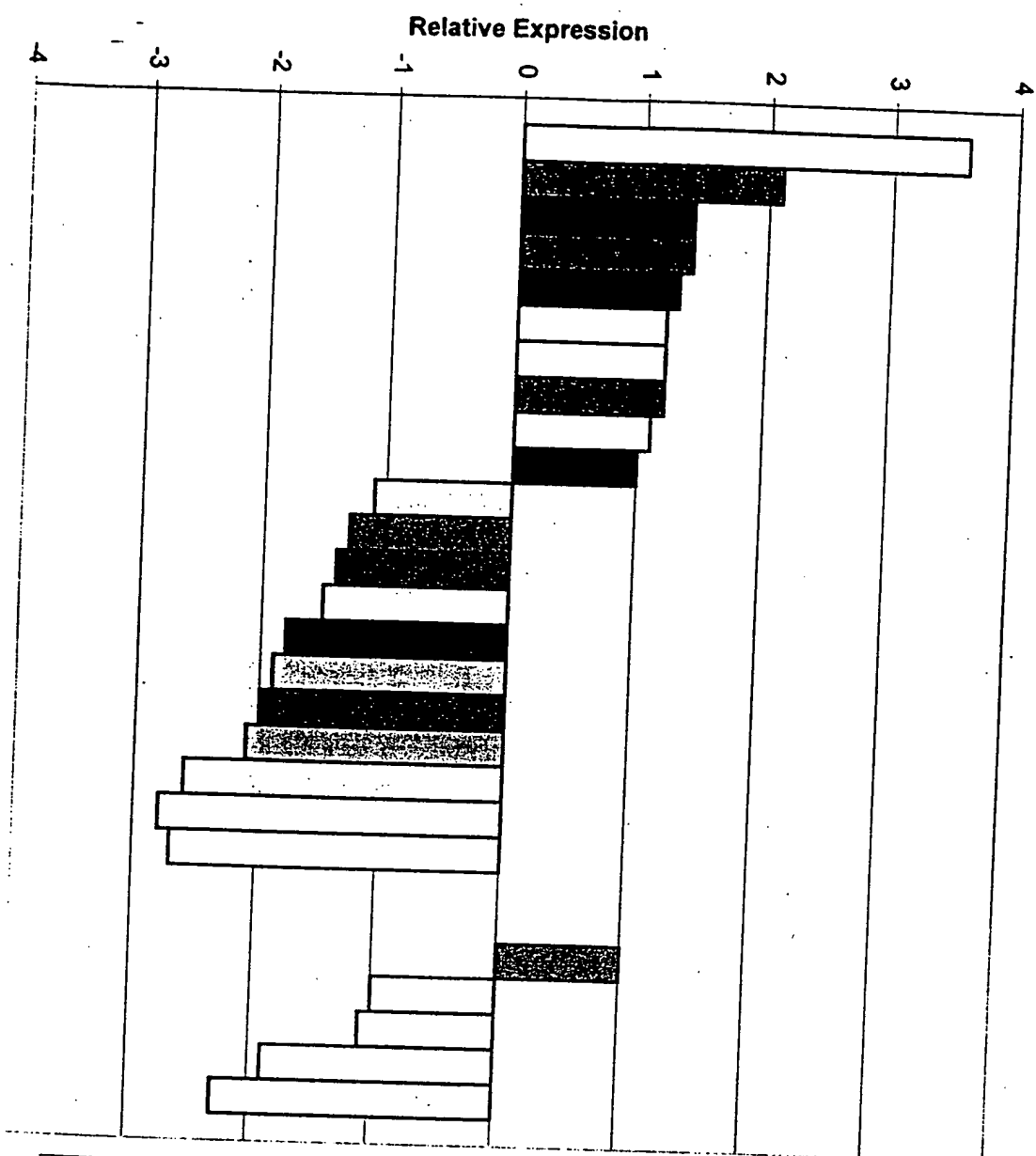
Collagen and Collagen Related Gene Expression 24hrs Post Exposure to 590nm LED (FDA Protocol)



32 y.o. FDA @24hrs Collagen Genes

Ratio	Expression	Gene	Title
2.531669	2.5	COL6A3	collagen, type VI, alpha 3
2.05182	2.1	COL6A2	collagen, type VI, alpha 2
1.856855	1.9	COL2A1	collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenital)
1.727144	1.7	COL5A1	collagen, type V, alpha 1
1.683993	1.7	COL1A2	collagen, type I, alpha 2
1.670322	1.7	COL5A1	collagen, type V, alpha 1
1.646328	1.6	COL5A2	collagen, type V, alpha 2
1.638354	1.6	COL6A1	collagen, type VI, alpha 1
1.626206	1.6	COL2A1	collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenital)
1.580482	1.6	COL6A3	collagen, type VI, alpha 3
1.562359	1.6	COL3A1	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)
1.520641	1.5	COL6A1	collagen, type VI, alpha 1
1.496971	1.5	COL1A2	collagen, type I, alpha 2
1.495848	1.5	COL2A1	collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenital)
1.477377	1.5	COL3A1	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)
1.477377	1.5	COL3A1	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)
1.442813	1.4	COL5A2	collagen, type V, alpha 2
1.442042	1.4	COL1A2	collagen, type I, alpha 2
1.401939	1.4	COL6A3	collagen, type VI, alpha 3
1.366514	1.4	COL3A1	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)
1.362203	1.4	COL6A2	collagen, type VI, alpha 2
1.301787	1.3	COL5A2	collagen, type V, alpha 2
1.272406	1.3	COL4A4	collagen, type IV, alpha 4
1.261297	1.3	COL5A1	collagen, type V, alpha 1
1.183484	1.2	COL6A2	collagen, type VI, alpha 2
1.12838	1.1	COL4A4	collagen, type IV, alpha 4
1.100256	1.1		Homo sapiens, alpha-1 (VI) collagen
1.070161	1.1	COL8A1	collagen, type VIII, alpha 1
1.070083	1.1	COL4A1	collagen, type IV, alpha 1
1.064188	1.1	COL4A2	collagen, type IV, alpha 2
1.031141	1.0	COL6A2	collagen, type VI, alpha 2
1.0254	1.0		Homo sapiens, alpha-1 (VI) collagen
1.008705	1.0	COL15A1	collagen, type XV, alpha 1
1.007988	1.0	COL15A1	collagen, type XV, alpha 1
0.98427	-1.0		ESTs, Highly similar to alpha-1 type XVI collagen [H.sapiens]
0.980927	-1.0	COL15A1	collagen, type XV, alpha 1
0.943084	-1.1	COL14A1	collagen, type XIV, alpha 1; undulin
0.932991	-1.1	COL4A4	collagen, type IV, alpha 4
0.926279	-1.1	COL18A1	collagen, type XVIII, alpha 1
0.909982	-1.1	COL18A1	collagen, type XVIII, alpha 1
0.888541	-1.1		ESTs, Highly similar to alpha-1 type XVI collagen [H.sapiens]
0.859286	-1.2	COL18A1	collagen, type XVIII, alpha 1
0.849972	-1.2	COL14A1	collagen, type XIV, alpha 1; undulin
0.844285	-1.2		EST, Moderately similar to collagen alpha 5(IV) chain precursor, renal splice form [H.sapiens]
0.834737	-1.2	COL8A1	collagen, type VIII, alpha 1
0.828952	-1.2	COL4A2	collagen, type IV, alpha 2
0.816129	-1.2	COL14A1	collagen, type XIV, alpha 1; undulin
0.811005	-1.2		Homo sapiens, alpha-1 (VI) collagen
0.796831	-1.3	COL17A1	collagen, type XVII, alpha 1
0.786203	-1.3	COL7A1	collagen, type VII, alpha 1 (epidermolysis bullosa, dystrophic, dominant and recessive)
0.757914	-1.3	COL8A1	collagen, type VIII, alpha 1
0.742002	-1.3	COL4A1	collagen, type IV, alpha 1
0.721844	-1.4		ESTs, Highly similar to alpha-1 type XVI collagen [H.sapiens]
0.674775	-1.5		EST, Moderately similar to collagen alpha 5(IV) chain precursor, renal splice form [H.sapiens]
0.643017	-1.6	COL4A1	collagen, type IV, alpha 1
0.588729	-1.7		EST, Moderately similar to collagen alpha 5(IV) chain precursor, renal splice form [H.sapiens]
0.579777	-1.7	COL7A1	collagen, type VII, alpha 1 (epidermolysis bullosa, dystrophic, dominant and recessive)
0.542816	-1.8	COL4A5	collagen, type IV, alpha 5 (Alport syndrome)
0.495827	-2.0	COL9A3	collagen, type IX, alpha 3
1.927321	1.9	CBP2	collagen-binding protein 2 (collagen 2)
1.925577	1.9	CBP2	collagen-binding protein 2 (collagen 2)
1.904415	1.9	CBP2	collagen-binding protein 2 (collagen 2)
1.707867	1.7	P4HB	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypeptide (protein disulfide isomerase; thyroid hormone binding protein p55)
1.687906	1.7	CD36	CD36 antigen (collagen type I receptor, thrombospondin receptor)
1.624668	1.6	CD36	CD36 antigen (collagen type I receptor, thrombospondin receptor)
1.605297	1.6	P4HB	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypeptide (protein disulfide isomerase; thyroid hormone binding protein p55)
1.548143	1.5	CD36	CD36 antigen (collagen type I receptor, thrombospondin receptor)
1.505069	1.5	P4HB	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypeptide (protein disulfide isomerase; thyroid hormone binding protein p55)
1.281258	1.3	P4HA1	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide 1
1.258884	1.3	P4HA1	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide 1
1.182269	1.2	P4HA1	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide 1
0.957576	-1.0	PLOD3	procollagen-lysine, 2-oxoglutarate 5-dioxygenase 3

42 y.o. Collagen Gene Expression 4hrs Post Exposure to 590nm LED (FDA Protocol)



- ☐ Collagen 7A1
- ☒ Collagen 4A1
- ☒ Collagen 4A4
- ☒ Collagen 18A1
- ☒ Collagen 1A2
- ☐ Collagen 4A2
- ☐ Collagen 9A3
- ☒ Collagen 17A1
- ☐ Collagen 4A5
- ☒ Collagen 6A1
- ☐ Collagen 5A2
- ☒ Collagen 15A1
- ☒ Collagen 6A1
- ☐ Collagen 8A1
- ☒ Collagen 16A1
- ☐ Collagen 5A1
- ☒ Collagen 6A2
- ☐ Collagen 6A3
- ☐ Collagen 3A1
- ☐ Collagen 2A1
- ☐ Collagen 11A1
- ☒ Collagen Receptor Type I (CD36)
- ☐ Procollagen Lysine
- ☐ Procollagen Proline Alpha Polypeptide 1
- ☐ Procollagen Proline Beta Polypeptide (p55)
- ☐ Collagen Binding Protein 2

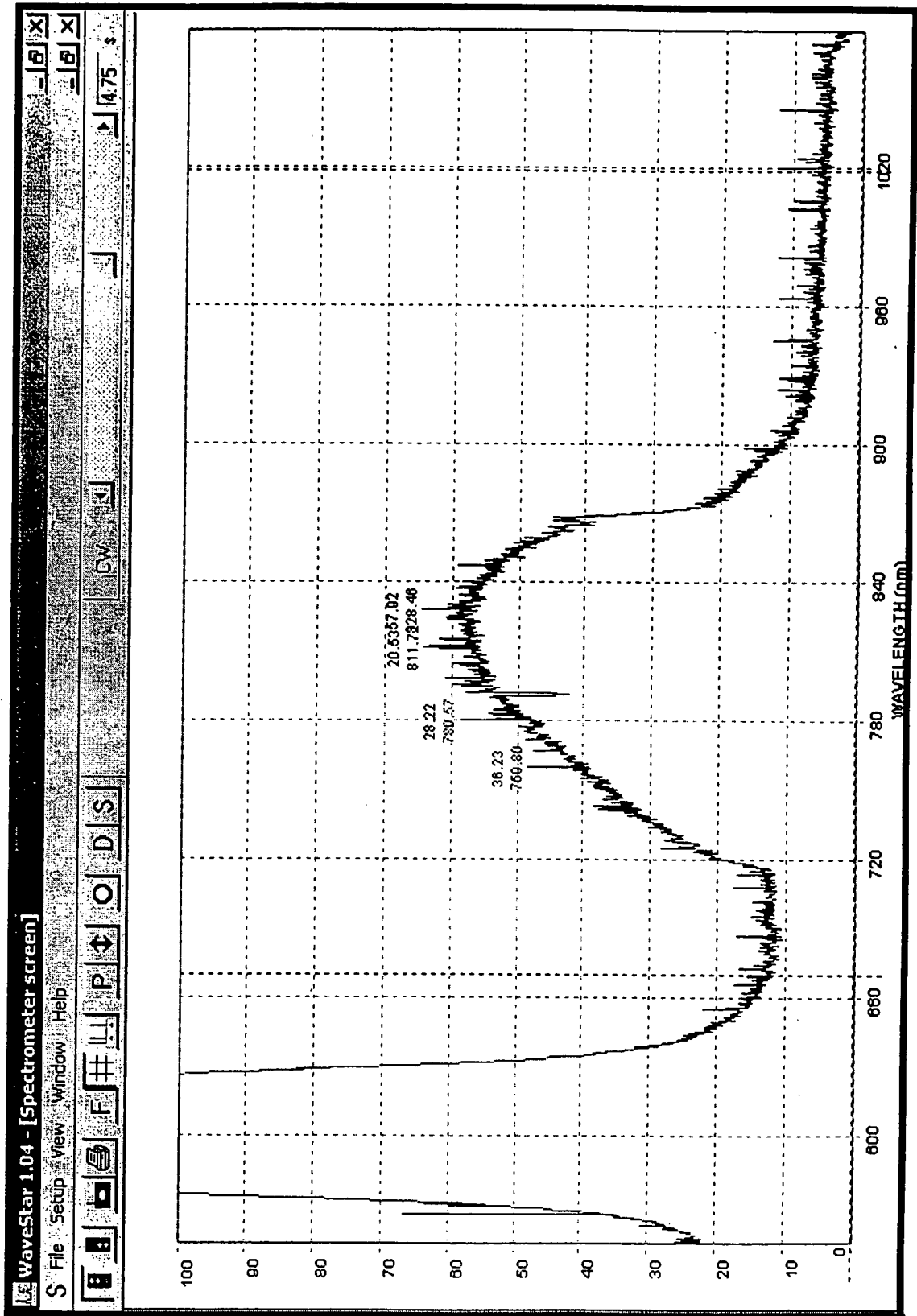
42 y.o. FDA @ 4hrs Collagen Genes

Title	Gene	Expression	Ratio
EST, Moderately similar to collagen alpha 5(IV) chain precursor, renal splice form [H.sapiens]	-	-1.1	0.886975
EST, Moderately similar to collagen alpha 5(IV) chain precursor, renal splice form [H.sapiens]	-	-1.4	0.706504
EST, Moderately similar to collagen alpha 5(IV) chain precursor, renal splice form [H.sapiens]	-	-1.6	0.634201
collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)	COL3A1	-2.3	0.434679
collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)	COL3A1	-2.6	0.379288
collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant)	COL3A1	1.2	1.173612
Collagen, type XI, alpha 1	-	-2.2	0.45689
Collagen, type XI, alpha 1	-	-4.4	0.228666
Collagen, type XI, alpha 1	-	-1.6	0.608198
collagen, type VI, alpha 3	COL6A3	-2.1	0.478778
collagen, type VI, alpha 3	COL6A3	-2.0	0.503927
collagen, type VI, alpha 3	COL6A3	-1.2	0.84916
collagen, type V, alpha 1	COL5A1	-1.9	0.530337
collagen, type V, alpha 1	COL5A1	-1.8	0.553828
collagen, type V, alpha 1	COL5A1	-1.0	0.983961
collagen, type IV, alpha 4	COL4A4	1.0	1.018455
collagen, type IV, alpha 4	COL4A4	-1.1	0.948074
collagen, type IV, alpha 4	COL4A4	1.4	1.35074
collagen, type XVII, alpha 1	COL17A1	1.2	1.218593
collagen, type VI, alpha 1	COL6A1	-1.4	0.733587
collagen, type VI, alpha 1	COL6A1	-1.1	0.939711
collagen, type VI, alpha 1	COL6A1	-1.4	0.737325
collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenital)	COL2A1	-2.8	0.35638
collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenital)	COL2A1	-1.1	0.888956
collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenital)	COL2A1	-1.2	0.837419
collagen, type XVIII, alpha 1	COL18A1	1.4	1.411757
collagen, type XVIII, alpha 1	COL18A1	1.0	1.039379
collagen, type XVIII, alpha 1	COL18A1	-1.1	0.940802
collagen, type IX, alpha 3	COL9A3	1.2	1.222958
collagen, type IV, alpha 5 (Alport syndrome)	COL4A5	1.1	1.11372
Homo sapiens, alpha-1 (VI) collagen	-	1.0	1.004226
Homo sapiens, alpha-1 (VI) collagen	-	-1.2	0.859052
Homo sapiens, alpha-1 (VI) collagen	-	-1.1	0.949637
ESTs, Highly similar to alpha-1 type XVI collagen [H.sapiens]	-	-1.5	0.647008
ESTs, Highly similar to alpha-1 type XVI collagen [H.sapiens]	-	-2.0	0.491904
ESTs, Highly similar to alpha-1 type XVI collagen [H.sapiens]	-	1.6	1.591
collagen, type IV, alpha 1	COL4A1	-1.1	0.912484
collagen, type IV, alpha 1	COL4A1	-1.8	0.565359
collagen, type IV, alpha 1	COL4A1	2.1	2.053369
collagen, type XIV, alpha 1; undulin	COL14A1	-1.1	0.88808
collagen, type XIV, alpha 1; undulin	COL14A1	1.2	1.222127
collagen, type XIV, alpha 1; undulin	COL14A1	-1.4	0.715605
collagen, type IV, alpha 2	COL4A2	1.0	1.046747
collagen, type IV, alpha 2	COL4A2	1.1	1.051478
collagen, type IV, alpha 2	COL4A2	1.2	1.2452
collagen, type V, alpha 2	COL5A2	-1.1	0.888978
collagen, type V, alpha 2	COL5A2	-1.2	0.842219
collagen, type V, alpha 2	COL5A2	1.1	1.14046
collagen, type XV, alpha 1	COL15A1	-1.3	0.766978
collagen, type XV, alpha 1	COL15A1	-1.3	0.79449
collagen, type XV, alpha 1	COL15A1	1.3	1.306858
collagen, type VI, alpha 2	COL6A2	-1.8	0.568313
collagen, type VI, alpha 2	COL6A2	1.1	1.115261
collagen, type VI, alpha 2	COL6A2	-2.0	0.499408
collagen, type I, alpha 2	COL1A2	1.3	1.297557
collagen, type I, alpha 2	COL1A2	-1.1	0.876936
collagen, type I, alpha 2	COL1A2	-1.2	0.804003
collagen, type VI, alpha 2	COL6A2	-2.2	0.461341

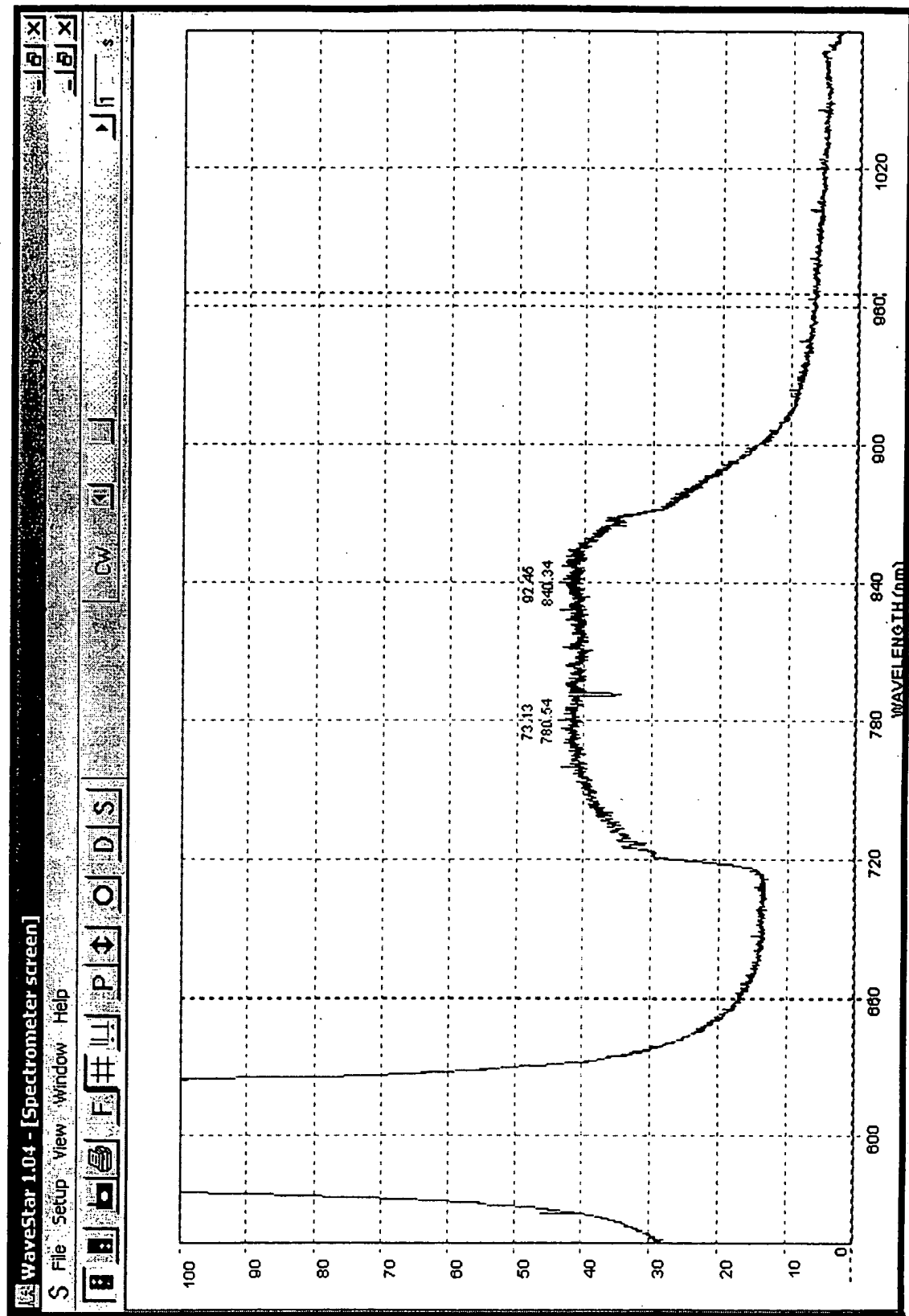
collagen, type VI, alpha 2	COL6A2	-1.9	0.538363
collagen, type VI, alpha 2	COL6A2	1.6	1.643196
collagen, type VII, alpha 1 (epidermolysis bullosa, dystrophic, dominant and recessive)	COL7A1	-1.2	0.814702
collagen, type VII, alpha 1 (epidermolysis bullosa, dystrophic, dominant and recessive)	COL7A1	-1.5	0.685069
collagen, type VII, alpha 1 (epidermolysis bullosa, dystrophic, dominant and recessive)	COL7A1	3.6	3.599896
collagen, type VIII, alpha 1	COL8A1	-1.4	0.69854
collagen, type VIII, alpha 1	COL8A1	-1.7	0.582106
collagen, type VIII, alpha 1	COL8A1	1.5	1.4999

procollagen-lysine, 2-oxoglutarate 5-dioxygenase 3	PLOD3	-1.0	0.992412
procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide 1	P4HA1	-1.1	0.893736
procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide 1	P4HA1	-1.1	0.873647
procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide 1	P4HA1	-1.3	0.773536
procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypeptide (prote	P4HB	-1.9	0.527621
procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypeptide (prote	P4HB	-1.7	0.571864
procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypeptide (prote	P4HB	-1.1	0.94726
CD36 antigen (collagen type I receptor, thrombospondin receptor)	CD36	-1.2	0.820479
CD36 antigen (collagen type I receptor, thrombospondin receptor)	CD36	1.0	1.035496
CD36 antigen (collagen type I receptor, thrombospondin receptor)	CD36	1.3	1.260294
procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), beta polypeptide (prote	P4HB	-1.5	0.677783
collagen-binding protein 2 (colligen 2)	CBP2	-2.5	0.406919
collagen-binding protein 2 (colligen 2)	CBP2	-2.0	0.505593
collagen-binding protein 2 (colligen 2)	CBP2	-1.2	0.850285

FDA Panel – no filtering



FDA Panel – no filtering



FDA Panel – no filtering

